DOCKET

No. 07-1239
Title: Donald C. Winter, Secretary of the Navy, et al., Petitioners
v.
Natural Resources Defense Council, Inc., et al.
Docketed: March 31, 2008
Lower Ct: United States Court of Appeals for the Ninth Circuit
Case Nos.: (08-55054)
Decision Date: February 29, 2008

Questions Presented

~~Date~~~	~~~~~~~Proceedings and Orders~~~~~~~~~~~~~~~~~~~~
Mar 31 2008	Petition for a writ of certiorari filed. (Response due April 30, 2008)
Mar 31 2008	Appendix of Donald C. Winter, Secretary of the Navy, et al. filed.
Apr 8 2008	Waiver of right of respondent California Coastal Commission to respond filed.
Apr 23 2008	Order extending time to file response to petition to and including May 23, 2008.
Apr 25 2008	Brief amicus curiae of California Forestry Association filed.
May 23 2008	Brief of respondents Natural Resources Defense Council, Inc., et al. in opposition filed.
Jun 2 2008	Reply of petitioners Donald C. Winter, Secretary of the Navy, et al. filed.
Jun 3 2008	DISTRIBUTED for Conference of June 19, 2008.
Jun 23 2008	Petition GRANTED.
Jun 24 2008	Motion to calendar oral argument in October 2008 filed by petitioners.
Jun 25 2008	Motion DISTRIBUTED for Conference of June 26, 2008.
Jun 27 2008	Motion to calendar oral argument in October 2008. GRANTED.
Jul 1 2008	SET FOR ARGUMENT ON Wednesday, October 8, 2008.
Aug 1 2008	Record received from the U.S.C.A. for the 9th Circuit. (1 envelope) (There are sealed documents in the record)
Aug 7 2008	Brief of petitioners Donald C. Winter, Secretary of the Navy, et al. filed.
Aug 7 2008	Motion for leave to file one volume of the joint appendix under seal filed by petitioner Donald C. Winter, Secretary of the Navy, et al. (CL Page 158)
Aug 7 2008	Joint appendix filed (Volume 1 & 2). (Statement of costs received.) (Distributed)
Aug 11 2008	CIRCULATED.
Aug 12 2008	Brief amici curiae of California Forestry Association, et al. filed. (Distributed)
Aug 13 2008	Brief amicus curiae of Pacific Legal Foundation filed. (Distributed)
Aug 13 2008	Record received. U.S.D.C. for the Central District of California. (3 boxes)
Aug 14 2008	Brief amici curiae of Washington Legal Foundation, et al. filed.

	(Distributed)
Aug 14 2008	Brief amici curiae of Navy League of the United States, et al. filed. (Distributed)
Aug 20 2008	Motion DISTRIBUTED for Conference of September 29, 2008.
Sep 8 2008	Brief of respondents Natural Resources Defense Council, Inc., et al. filed. (Distributed)
Sep 8 2008	Brief of respondent California Coastal Commission filed. (Distributed)
Sep 9 2008	Letter, dated September 9, 2008, received from the Acting Solicitor General. (Distributed).
Sep 11 2008	Proposal of petitioner to lodge copies of volumes of excerpts of record and supplemental excerpts of record filed in a prior appeal in this case received.
Sep 15 2008	Brief amici curiae of Defenders of Wildlife, et al. filed. (Distributed)
Sep 15 2008	Brief amici curiae of Law Professors Michael C. Small, Jonathan D. Varat, and Adam Winkler filed. (Distributed)
Sep 15 2008	Brief amicus curiae of Ecological Society of America filed. (Distributed)
Sep 15 2008	Brief amici curiae of California Assembly Member Julia Brownley, and California Senator Christine Kehoe (Distributed).
Oct 1 2008	Reply of petitioners Donald C. Winter, Secretary of the Navy, et al. filed. (Distributed)
Oct 6 2008	Motion for leave to file one volume of the joint appendix under seal GRANTED.
Oct 8 2008	Argued. For petitioners: Gregory G. Garre, Solicitor General, Department of Justice, Washington, D.C. For respondents: Richard B. Kendall, Los Angeles, Cal.

PETITION FOR WRIT OF CERTIORARI

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No.

In the Supreme Court of the United States

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., PETITIONERS

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

The district court found a likelihood that the Navy failed to comply with the National Environmental Policy Act (NEPA) and preliminarily enjoined the Navy's use of mid-frequency active (MFA) sonar during training exercises that prepare Navy strike groups for worldwide deployment. The Chief of Naval Operations concluded that the injunction unacceptably risks the training of naval forces for deployment to high-threat areas overseas, and the President of the United States determined that the use of MFA sonar during these exercises is "essential to national security." The Council on Environmental Quality (CEQ), applying a longstanding regulation, accordingly found "emergency circumstances" for complying with NEPA without completing an environmental impact statement. The Ninth Circuit nevertheless sustained the district court's conclusion that no "emergency circumstances" were present and affirmed the preliminary injunction. The questions presented are:

1. Whether CEQ permissibly construed its own regulation in finding "emergency circumstances."

2. Whether, in any event, the preliminary injunction, based on a preliminary finding that the Navy had not satisfied NEPA's procedural requirements, is inconsistent with established equitable principles limiting discretionary injunctive relief.

PARTIES INVOLVED

Petitioners are Donald C. Winter, Secretary of the Navy; U.S. Department of the Navy; Carlos M. Gutierrez, Secretary of Commerce; National Marine Fisheries Service; William Hogarth, Assistant Administrator for Fisheries of the National Oceanographic and Atmospheric Administration; and Vice Admiral Conrad C. Lautenbacher, Jr., Administrator of the National Oceanographic and Atmospheric Administration.

Respondents who were plaintiffs-appellees below are Natural Resources Defense Council, Inc.; International Fund for Animal Welfare; Cetacean Society International; League for Coastal Protection; Ocean Futures Society; and Jean-Michel Cousteau.

Respondent California Coastal Commission was intervenor-appellee below.

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In the Supreme Court of the United States

No.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., PETITIONERS

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

PETITION FOR A WRIT OF CERTIORARI

The Solicitor General, on behalf of petitioners, respectfully petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Ninth Circuit.

OPINIONS BELOW

The opinion and order of the court of appeals (App. 1a-90a, 91a-95a) are not yet reported; a prior opinion and order (App. 171a-174a, 175a-194a) are reported at 508 F.3d 885 and 502 F.3d 859. The district court's orders (App. 96a-137a, 150a-170a, 195a-218a) are reported at 527 F. Supp. 2d 1216 and 530 F. Supp. 2d 1110 and available at 2007 WL 2481037. Other orders of the district court (App. 138a-144a, 145a-149a) are unreported.

JURISDICTION

The judgment of the court of appeals was entered on February 29, 2008. The jurisdiction of this Court is invoked under 28 U.S.C. 1254(1).

STATUTORY AND REGULATORY PROVISIONS INVOLVED

Pertinent provisions are set out in the appendix to the petition (App. 358a-365a).

STATEMENT

The U.S. Navy has conducted training exercises using mid-frequency active (MFA) sonar within the Southern California Operating Area (SOCAL) for over 40 years. That historical practice has taken on added significance in light of ongoing hostilities and developments in submarine technology. The Navy scheduled a series of up to 14 certification exercises, from February 2007 through January 2009, in SOCAL to prepare naval strike groups for deployment to the western Pacific and Middle East. The use of MFA sonar to detect submarines is an essential element of those exercises, which train the thousands of military personnel in a strike group to operate as an integrated unit in simultaneous air, surface, and undersea warfare. The Navy has completed seven of the planned exercises (another exercise is underway) in compliance with the statutes that provide substantive protection to marine mammals: the Marine Mammal Protection Act of 1972 (MMPA), 16 U.S.C. 1361 *et seq.*, and the Endangered Species Act of 1973 (ESA), 16 U.S.C. 1531 *et seq.* Those exercises, like those over the past 40 years, have produced no evidence of sonar-related harm to any marine mammal. The President has determined that the exercises using MFA sonar are "essential to the national security." The Ninth Circuit nevertheless affirmed a preliminary injunction barring use of

MFA sonar in critical respects based on a finding of a violation of the procedural provisions of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 *et seq.*

1. a. The Navy deploys forces in strike groups that include either an aircraft carrier (with an air wing) or an amphibious assault ship (with a Marine expeditionary unit) accompanied by three to five other ships. App. 8a n.6. Each ship trains separately before a strike group is organized but must also complete integrated training as part of the strike group to enable the group's thousands of Sailors and Marines to function effectively as a single combat force. App. 8a-9a & n.6, 320a, 342a-343a. The Composite Training Unit Exercises (COMPTUEXs) and Joint Task Force Exercises (JTFEXs) at issue in this case train strike groups in the integrated and simultaneous use of a broad range of air, surface, and sub-surface warfare skills requiring close coordination of all strike-group assets. The exercises attempt to replicate with live opposition forces the real-world conditions that strike groups face while performing military missions and defending the fleet. *Ibid.*; E.R. 76, 103 (C.A. No. 07-56157).

The complexity of integrating the efforts of thousands of personnel to make the exercises a meaningful simulation of real-world military situations is substantial. The exercises are conducted under "austere, hostile conditions" (E.R. 60) that "stress every aspect of strike group performance" through complex battle problems and advanced, unscripted war games (App. 342a-344a) in order to hone the skills needed to "examine and prioritize every potential threat, balance competing demands of specific warfare commanders, and apportion limited assets to counter threats," while executing military missions and maintaining "force protection." E.R. 70; see E.R. 59-60, 65-66, 69-70.

The only opportunity for the Navy's Pacific Fleet strike groups to conduct such pre-deployment training is in COMPTUEX and JTFEX exercises in SOCAL. App. 271a, 342a; E.R. 70, 1155. SOCAL is the only complex on the west coast containing all land, air, and at-sea bases (including an instrumented range on the ocean floor and amphibious landing areas) necessary to train air, sea, and undersea forces simultaneously in an integrated manner. 73 Fed. Reg. 4190 (2008); E.R. 65-66, 68, 104-105; App. 182a, 235a, 327a-328a, 337a.

b. Anti-submarine-warfare training, including the use of MFA sonar, is a critical aspect of the exercises. App. 9a. The Navy continuously deploys strike groups to high-threat areas in the western Pacific and Middle East where modern quiet-running diesel-electric submarines are operated by the Nation's potential adversaries. E.R. 1148, 1151; App. 270a-271a. MFA sonar is a strike group's *only* effective means to detect diesel-electric submarines before they close within weapons range, and such timely detection "is essential to U.S. Navy ship survivability." App. 269a-271a, 274a, 277a; see E.R. 1144-1147; 73 Fed. Reg. at 4190.

MFA sonar operations are complex and require constant training to achieve and maintain combat proficiency and effectiveness. App. 266a-281a, 356a; E.R. 1149, 1154. Such training in real-world conditions is necessary to coordinate the efforts of a carrier or amphibious assault ship, its escort ships, and other assets to defend themselves against hostile submarines while simultaneously conducting both offensive and defensive air, sea, and amphibious operations. App. 270a-271a, 279a-285a; E.R. 1148-1150.

2. In preparation for the current series of COMPTUEXs and JTFEXs, the government took a number of actions to comply with environmental statutes.

a. In October 2006, the Navy determined that the MFA sonar component of the exercises would not "affect" California's coastal zone and submitted a "consistency determination" to the California Coastal Commission pursuant to the Coastal Zone Management Act of 1972 (CZMA). App. 29a; 16 U.S.C. 1456(c)(1)(A) and (C); 15 C.F.R. 930.41.

b. On January 23, 2007, the Deputy Secretary of Defense—pursuant to 16 U.S.C. 1371(f) (Supp. V 2005) and after consultation with the Department of Commerce—issued a two-year National Defense Exemption (NDE II) from the MMPA for certain military readiness activities, including MFA sonar use during the exercises at issue here, based on his determination that the exemption was "necessary for the national defense." App. 219a-220a. The exemption requires the Navy to comply with 29 marine-mammal-protective measures developed in consultation with the National Marine Fisheries Service (NMFS), the component of the Department of Commerce with responsibility for implementing the MMPA's protections for marine mammals such as whales and other cetaceans. App. 220a-230a.

c. On February 9, 2007, NMFS issued a biological opinion (E.R. 768-952) under the ESA, which concluded that, while MFA sonar exposure from the SOCAL exercises might harass members of threatened or endangered species, it is not likely to jeopardize the continued existence of any listed species. E.R. 906-907; 16 U.S.C. 1536(a)(2). NMFS further determined that it did "not expect any [such] species to be injured or killed as a result of exposure" and exercised its statutory authority to issue an "incidental take statement," subject to several conditions, that authorizes the Navy to "take" listed species incidental to MFA sonar use. E.R. 906-910; see 16 U.S.C. 1536(b)(4)(iv) and (*o*)(2).

d. Finally, in February 2007, the Navy issued an environmental assessment (EA) under NEPA for up to 14 planned exercises in SOCAL through January 2009. See E.R. 44-336; E.R. 339-635 (EA appendices). The Navy had initiated an environmental impact statement (EIS) in late 2006 to analyze the environmental impacts of *all* future Navy activities in SOCAL (including exercises involving MFA sonar). See 71 Fed. Reg. 76,639 (2006). The draft EIS is scheduled for release in April 2008 and the final EIS in January 2009. App. 235a-237a; U.S. Navy, *SOCAL EIS* <http://www.socalrangecomplexeis.com/GetInvolved.aspx>.

The 293-page EA comprehensively evaluated scientific evidence and the results of computer modeling to predict the effect of MFA sonar on marine mammals. That model defined "Level A" harassment as an action that "injures or has the significant potential to injure a marine mammal" in the "slightest" degree, including any permanent hearing loss (known as a permanent threshold shift (PTS)). E.R. 209-211, 232-233. The model defined "Level B" harassment as an action that disturbs a marine mammal by disrupting its natural behavior patterns, including actions predicted either to cause short-term hearing loss (TTS) or to disrupt temporarily a mammal's behavior without hearing loss (sub-TTS). *Ibid.* "All level B harassment" involved "short term and temporary" harassments that would be "highly unlikely" to cause "behavioral patterns [to be] abandoned or significantly altered." E.R. 232; cf. E.R. 222. The model intentionally "over-estimate[d]" the number of harassing exposures by assuming that marine mammals were evenly distributed throughout SOCAL and would not move to avoid sonar exposure, and that sonar use would proceed without the Navy's mitigation measures. E.R. 231-233.

Using those assumptions, the model predicted roughly 80,000 annual sub-TTS exposures (short-term behavioral disruptions with no hearing loss), nearly 79,000 of which involved various non-endangered, non-threatened dolphin species, which travel in large pods and are easily detected and protected with the Navy's NDE II mitigation measures. E.R. 245, 400; see E.R. 244, 250-252, 254, 256. The assessment further predicted 274 annual non-injurious exposures for non-endangered, non-threatened beaked whales: 13 TTS and 261 sub-TTS exposures. E.R. 243, 246, 257, 400. The model's only predicted injuries to marine mammals were eight annual exposures of permanent hearing loss (PTS) for common dolphins, which the Navy's mitigation measures would be effective in preventing. E.R. 245, 400.

The EA explained that, while its "modeling predicts [only] non-injurious Level B exposures" for beaked whales, the EA tabulated those exposures as non-lethal "Level A" exposures (E.R. 400-401 & n.**) to identify them separately as a "potential injury." E.R. 224, 243, 246, 257. The EA's "total" of 282 annual Level A exposures thus reflects an estimate of eight annual injury-level exposures for common dolphins (without mitigation measures) and 274 annual non-injurious exposures for beaked whales. E.R. 400-401 & n.**. To provide context, commercial fishing caused approximately 650,000 marine-mammals deaths annually in the 1990s with over 6000 annual deaths in U.S. fisheries alone. E.R. 1086-1087.

Based on its final EA, the Navy determined that its exercises from February 2007 through January 2009 would not have a significant impact on the environment and, accordingly, that NEPA did not require an EIS for those exercises. E.R. 63, 642; see E.R. 638-645. That conclusion parallels the historical pattern in SOCAL. Over the last 40

years, the Navy has employed MFA sonar systems using the same frequency and intensity (*i.e.*, the decibel level of the sonar source) as those used today and, since 1992, the number of training hours in SOCAL has declined. App. 268a-269a, 273a-274a; E.R. 66, 779, 876. There were no documented incidents of harm, injury, or death to marine mammals resulting from exposure to MFA sonar in SOCAL in those 40 years, nor were there any mass-stranding incidents or population-level effects attributable to MFA sonar in SOCAL. App. 274a-275a; E.R. 876, 1052-1053, 1074, 1084-1085, 1136-1137.

3. a. On March 22, 2007, respondents filed suit in the Central District of California, seeking to declare the SOCAL exercises in violation of NEPA, the CZMA, and the ESA, and to enjoin the Navy's use of MFA sonar. E.R. 1157-1203.

The district court issued a preliminary injunction on August 7, 2007, concluding that respondents would likely prevail on their NEPA and CZMA claims (but not their ESA claim) and enjoining all MFA sonar use in the planned SOCAL exercises. App. 200a-218a. The court concluded that such sonar use would create a "near certainty" of irreparable harm to the environment, App. 217a, relying on the Navy EA's prediction of approximately 170,000 marine-mammal harassment incidents over the two-year exercise period, including 8000 instances of temporary hearing loss and what the court described as "466 cases of permanent injury to beaked and ziphiid whales." App. 204a, 206a-207a.

b. The Ninth Circuit stayed the preliminary injunction pending appeal, concluding that the district court "did not give serious consideration to the public interest" in national defense at a time of war. App. 180a-183a. Another panel remanded the case on November 13, 2007, directing the district court "to narrow its injunction so as to provide miti-

gation conditions under which the Navy may conduct its training exercises." App. 174a. That panel concluded that some form of preliminary injunctive relief would be appropriate based on what it determined to be respondents' likelihood of success on their NEPA and CZMA claims, the "possibility of irreparable injury," and a balance of hardships that would tip in respondents' favor "if a properly tailored injunction is issued." App. 172a.

c. On January 3, 2008, the district court issued a new preliminary injunction. App. 150a-170a. The court restated its conclusions regarding respondents' likelihood of success on their CZMA and NEPA claims, App. 154a-163a, and irreparable harm, and determined that the balance of hardships favored an injunction and that the "public interest outweighs the harm [the Navy] would incur (or the public interest would suffer)" from restricted sonar use. App. 163a-164a.

The court accordingly imposed a series of restrictions on sonar use, which it modified on January 10, 2008. App. 138a-149a. Of particular relevance here, the court ordered that the Navy (1) cease sonar transmissions whenever a marine mammal is spotted within 2200 yards (1.25 miles) of any sonar source, and (2) reduce sonar power by six decibels (75%) whenever the Navy detects "significant surface ducting," an environmental condition characterized by a mixed layer of constant water temperature extending at least 100 feet from the surface, whether or not a marine mammal is present. App. 139a-140a, 142a-143a, 284a-285a, 297a.

The Chief of Naval Operations (CNO), who is responsible under 10 U.S.C. 5062 for organizing, training, and equipping the Navy, determined that those restrictions unacceptably risk naval training, the timely deployment of

strike groups, and national security. App. 341a-347a.[1] The 2200-yard shut-down requirement "crippl[es]" the Navy's ability to conduct realistic pre-deployment training and to assess a strike group's capabilities. App. 332a, 344a-346a, 353a-357a; App. 269a-271a, 279a-285a. Similarly, a 75% power-down requirement "dramatically reduce[s]" the likelihood of detecting a submarine, App. 284a, and the corresponding reduction in detection range prevents strike groups from conducting sonar operations to detect a submarine before it is positioned to attack. App. 279a-285a, 354a-356a; cf. E.R. 1147-1151. Training in significant surface ducting is "critical" because submariners exploit the condition by hiding below the duct's thermocline where the detection capability of even full-power sonar is reduced. App. 299a-300a, 333a. Moreover, anti-submarine warfare is a high-stakes cat-and-mouse game that may span days and "require[] large teams of personnel working in shifts around the clock." App. 278a, 344a. As a result, the loss of sonar-tracking capability during the integrated air, surface, and subsurface training can negate the effectiveness of the entire exercise, unacceptably risking national security and the Navy's ability to deploy adequately trained strike groups. App. 345a, 354a-356a; see App. 314a-325a.

4. Petitioners appealed and sought a stay of the aspects of the injunction just described. Meanwhile, the district court's CZMA- and NEPA-based injunction prompted a series of emergency actions by the Executive pursuant to statutory and regulatory powers.

On January 15, 2008, the President exercised his express authority under the CZMA to exempt a federal activity from CZMA compliance if he finds it to be "in the para-

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[1] Unredacted copies of the classified declarations of the CNO and other naval officers have been lodged with the Court.

mount interest of the United States." 16 U.S.C. 1456(c)(1)(B); see App. 231a-232a. The President determined that "the COMPTUEX and JTFEX, including the use of mid-frequency active sonar in these exercises, are in the paramount interest of the United States," and that, in light of the district court's injunction, an exemption was necessary "to ensure effective and timely training of the United States naval forces" because compliance would "undermine the Navy's ability to conduct realistic training exercises that are necessary to ensure * * * combat effectiveness." *Ibid.* The President accordingly issued the exemption to "enable the Navy to train effectively and to certify * * * strike groups for deployment" in support of operational and combat activities "essential to national security." *Ibid.*

Contemporaneous with the President's action, the Council on Environmental Quality (CEQ) authorized alternative arrangements for NEPA compliance in "emergency circumstances," pursuant to 40 C.F.R. 1506.11 and after extensive consultation with the Navy and NMFS and reviewing relevant documentary materials. App. 233a-249a. Noting that NMFS had determined that the Navy's SOCAL exercises were not expected to injure or kill marine mammals or cause any "adverse population level effects for any * * * marine mammal populations" (App. 255a, 258a), and that the next SOCAL exercise was imminent, CEQ concluded that "emergency circumstances" warranted "alternative arrangements for compliance with NEPA" through enhanced environmental-assessment and public-participation measures until the Navy's ongoing SOCAL EIS is completed. App. 240a-241a, 247a-248a. The Navy issued a decision accepting CEQ's alternative arrangements. 73 Fed. Reg. at 4189.

5. The court of appeals remanded to permit the district court to consider the Executive's intervening actions. App. 7a. After partially staying its preliminary injunction to permit the January 2008 exercise to proceed, the district court denied petitioners' motion to vacate the injunction. App. 96a-137a. The court questioned the constitutionality of the President's exemption under the CZMA because it believed the exemption rendered the court's earlier rulings advisory. App. 126a-135a. Rather than decide that question, however, the court held that its preliminary injunction remained an appropriate remedy for a NEPA violation alone: The court concluded that CEQ's approval of alternative NEPA arrangements under 40 C.F.R. 1506.11 was invalid because its injunction restricting strike-group training was not a "sudden, unanticipated event[]" giving rise to "emergency" circumstances under what the court regarded as "the plain language of the regulation." App. 97a, 112a-122a.

6. The court of appeals affirmed. App. 1a-90a. It likewise did not reach the validity of the President's actions under the CZMA, and it purported not to "adjudicate the meaning of the word 'emergency'" under CEQ's regulation. App. 4a n.3, 45a n.41. Instead, while recognizing that not all definitions of "emergency" supported the district court's conclusion, it held that the district court did not "abuse its discretion or rely on an erroneous legal premise in determining that CEQ's broad interpretation of 'emergency circumstances' was not authorized by 40 C.F.R. § 1506.11." App. 45a n.41, 56a. With CEQ's alternative NEPA arrangements thus put aside, the court affirmed the district court's conclusion that respondents demonstrated a likelihood of success on the merits of their NEPA claim that an EIS was required. App. 60a-74a.

The court of appeals further held that the district court properly issued preliminary injunctive relief because respondents had shown a "possibility of irreparable injury" to marine mammals, App. 74a-77a, and because, in its view, the Navy failed to prove that the injunction would prevent it from effectively training or certifying its strike groups for deployment, App. 78a-87a. While noting that "there remains the possibility" the Navy would be unable to certify its strike groups because of the injunction, the court concluded the district court did not err in concluding that the balance of hardships tipped in favor of maintaining the injunction. App. 88a-89a.

Nonetheless, in view of the "importance of the Navy's mission" and "the representation by the Chief of Naval Operations that the district court's preliminary injunction in its current form will 'unacceptably risk' effective training and strike group certification," App. 93a, the court *sua sponte* granted a temporary partial stay from the injunction's 2200-yard mandatory shutdown and surface-ducting power-down requirements. App. 93a-95a. That stay will expire, however, upon this Court's disposition of this case. App. 95a.

REASONS FOR GRANTING THE PETITION

The Ninth Circuit has affirmed a preliminary injunction that jeopardizes the Navy's ability to train Sailors and Marines for wartime deployment during a time of ongoing hostilities. The decision poses substantial harm to national security, and improperly overrides the collective judgments of the political Branches and the Nation's top naval officers regarding the overriding public interest in a properly trained Navy. The applicable statutes do not direct the counterintuitive result that vital military exercises must yield to a preliminary determination that procedural errors

under NEPA have occurred. The relevant environmental statutes affording substantive protection to marine mammals all have been complied with or have exceptions that were properly invoked. CEQ's NEPA regulations likewise provide a safety valve for emergency circumstances. And even if a NEPA violation were found *at the end* of the litigation, established equitable principles afford the flexibility to avoid relief that poses serious risk to national security. The Ninth Circuit's rejection of that course rests on numerous legal errors and conflicts with the decisions of this Court and other courts of appeals. Review by this Court therefore is warranted.

CEQ's interpretation of 40 C.F.R. 1506.11's application to "emergency" circumstances is entitled to substantial deference. Yet, rather than accord such deference, the Ninth Circuit deferred to the *district court's* contrary reading under an abuse-of-discretion standard. Not only is the court's holding inconsistent with a common-sense understanding of "emergency" circumstances and established principles of agency deference, it is contradicted by decisions of other courts of appeals concluding that "emergency" encompasses urgent circumstances even if such circumstances may have been anticipated or foreseen. The Ninth Circuit's decision also conflicts with the D.C. Circuit's approach to applying Section 1506.11 and this Court's decisions requiring deference to agency interpretations.

Moreover, the Ninth Circuit fundamentally misapplied established equitable principles in affirming the preliminary injunction. Congress, in the MMPA, has already determined that the public interest in military readiness outweighs the interest in protecting marine mammals where, as here, the Deputy Secretary of Defense, in consultation with the Secretary of Commerce, has exempted specific readiness activities. Courts of equity lack authority to dis-

regard that statutory balance. But, even if a sufficient showing of actual harm to marine mammals could warrant equitable relief notwithstanding Congress's contrary judgment, the Ninth Circuit, in conflict with other courts of appeals, erred in affirming the preliminary injunction on the "mere possibility" of such harm and failed to accord proper deference to the professional judgment of the President and the Nation's top naval officers that the injunction unreasonably risks the Navy's ability to conduct effective and essential military training.

The immediate and substantial adverse effects of the Ninth Circuit's decision on national security are plain. The President—the Commander in Chief—determined that the injunctive order undermines the Navy's ability "to conduct realistic training exercises that are necessary to ensure combat effectiveness," "essential to national security," and in "the paramount interest of the United States." App. 232a. The Chief of Naval Operations had previously determined that the injunction creates an unacceptable risk to the Navy's ability to train for essential overseas operations at a time when the United States is engaged in war in two countries. App. 44a, 81a. Indeed, the Ninth Circuit *sua sponte* issued a stay of those portions of the injunction that the CNO determined would jeopardize essential naval training pending disposition of the case by this Court. App. 93a. This Court's review is therefore warranted.

1. The President's decision to exempt the Navy's exercises from CZMA compliance and the Navy's acceptance of CEQ-approved alternative arrangements for NEPA compliance removed the bases for the preliminary injunction, which was based on the district court's holding that respondents had shown a likelihood of success on their CZMA and NEPA claims. Neither the district court nor the Ninth Circuit disturbed the President's CZMA exemption, which,

in any event, is not subject to judicial review in this suit under the Administrative Procedure Act (APA), 5 U.S.C. 701 *et seq.* See *Franklin* v. *Massachusetts*, 505 U. S. 788, 800-801 (1992). But both courts nevertheless kept the preliminary injunction in place, now on NEPA grounds alone. The Ninth Circuit clearly erred in affirming the preliminary injunction based on the district court's disagreement with CEQ's determination that "emergency circumstances" warranted alternative NEPA arrangements under Section 1506.11. CEQ's reasonable construction of its own regulation fully comports with the regulation's text and should have been given controlling weight.

NEPA is a procedural statute that directs federal agencies, "to the fullest extent possible" but "consistent with other essential considerations of national policy," to prepare a "detailed statement" on "the environmental impact" of proposed "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. 4331(b), 4332(2)(C). NEPA does not specify what constitutes a "detailed statement." Instead, regulations issued by CEQ identify the steps that federal agencies should follow. 40 C.F.R. 1500.3; see 40 C.F.R. 1501.4 and Pt. 1502; *Robertson* v. *Methow Valley Citizens Council*, 490 U.S. 332, 350, 355-356 (1989) (CEQ regulations are entitled to "substantial deference").

NEPA, like the Constitution that authorizes its enactment, is not a suicide pact. Consistent with the "rule of reason" "inherent in NEPA and its implementing regulations," *Department of Transp.* v. *Public Citizen*, 541 U.S. 752, 767 (2004), CEQ's regulations have long authorized agencies to use "alternative arrangements" where "emergency circumstances make it necessary to take an action" having significant environmental impact without observing the provisions of the regulations implementing NEPA. 40 C.F.R. 1506.11.

Thus, as respondent NRDC explained to Congress, "NEPA itself allows for emergency action prior to completion of environmental documentation in consultation with the CEQ." *Federal Forest Management: Hearings Before the Subcomm. on Forests and Public Land Management of the Senate Comm. on Energy and Natural Resources*, 104th Cong., 1st Sess. 219, 222 & n.15 (1995) (citing 40 C.F.R. 1506.11); cf. App. 42a; 137 Cong. Rec. 7007-7010 (1991).

The need to conduct vital military exercises in a time frame that does not allow completion of an EIS surely qualifies as such an "emergency." In this case in particular, CEQ determined that "emergency circumstances" exist in light of: the significant risk that the Navy would be unable to effectively prepare strike groups essential to national security under the district court's January 2008 injunction; the proximity of a January 2008 exercise whose failure would "have immediate ramifications for Navy deployments around the world;" and the lack of "sufficient time to complete an EIS" before future strike groups must be properly trained for worldwide deployment. App. 238a-240a. CEQ's interpretation of the term "emergency circumstances" comports with the regulatory text and common sense and must be given "controlling weight unless it is plainly erroneous or inconsistent with the regulation" itself. *Thomas Jefferson Univ.* v. *Shalala*, 512 U.S. 504, 512 (1994) (internal quotation omitted); accord *Auer* v. *Robbins*, 519 U.S. 452, 461 (1997). Because CEQ's interpretation comports with the regulatory text, the Ninth Circuit plainly erred in affirming the injunction.

The injunction rests on the district court's ruling that no emergency resulted from the court's January 2008 order because the injunction was the foreseeable result of the Navy's failure to complete an EIS, and that only "sudden unanticipated event[s]" can give rise to an "emergency"

under CEQ's regulation. App. 43a-50a. That ruling, sustained by the Ninth Circuit, is untenable. While one definition of "emergency" encompasses "unforseen" or "unexpected" circumstances requiring immediate action, it can more broadly mean a "condition of urgent need for action or assistance." See *American Heritage Dictionary of the English Language* 602 (3d ed. 1992) (def. 2).[2] Indeed, as other courts of appeals have recognized, "some genuine emergencies can be anticipated well in advance." *Pleasantview Nursing Home, Inc.* v. *NLRB*, 351 F.3d 747, 756 n.4 (6th Cir. 2003). A strike by air traffic controllers, for instance, may give rise to an "operational emergency" even if the strike was "reasonably foreseeable" and might have been prevented. See *Letenyei* v. *Department of Transp.*, 735 F.2d 528, 531-532 (Fed. Cir. 1984) (en banc); see also 29 U.S.C. 176, 178 ("national emergency" exists where strike would "imperil the national health or safety"); *United Steelworkers* v. *United States*, 372 F.2d 922, 924 (D.C. Cir. 1966) (per curiam) ("any strike which affects [the military aircraft engine] industry" to "the jeopardy of our national safety" falls within "emergency provisions of Taft-Hartley [Act]").

Whether or not the Navy should have foreseen that a court would find a likelihood that an EIS was required, one

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[2] Accord *Random House Dictionary of the English Language* 636 (2d ed. 1987) ("a situation demanding immediate action," which is "usually unexpected;" "exigency"); *Webster's New Collegiate Dictionary* 368 (1981) (def. 2: "a pressing need"); *Black's Law Dictionary* 469 (5th ed. 1979) (listing multiple definitions, including "exigency" and "pressing necessity"); see also, *e.g.*, *Oxford American Dictionary and Language Guide* 313 (1999) ("a sudden state of danger, conflict, etc., requiring immediate action"); *Webster's Third New International Dictionary of the English Language* 741 (1967) (def. 1c: "a usu. distressing event or condition that can often be anticipated or prepared for but seldom exactly foreseen").

was not prepared, and the court order demanding an EIS before vital military exercises can proceed constitutes an emergency. As the Fourth Circuit recognized, "[i]t would be unreasonable to restrict the definition of 'emergency' to those situations in which the underlying facts are sudden and unforeseen" because, even where a government agency is fully aware of the factors leading to a predictable crisis, the circumstances that ultimately result can "constitut[e] an 'emergency'" if they "requir[e] immediate and drastic action." *United States* v. *Southern Ry.*, 380 F.2d 49, 51 n.4, 55 n.17 (4th Cir. 1967). An "emergency situation" exists when an immediate response is needed to avert a significant impending harm to the public interest, and, for that reason, "[a]n assessment of blame regarding [the cause of] the predicament * * * is quite frankly irrelevant to a determination of whether [the government] is faced with an 'emergency situation.'" *Yonkers Racing Corp.* v. *City of Yonkers*, 858 F.2d 855, 866 (2d Cir. 1988) ("emergency situation" may arise where conditions were caused by city's "own intransigence"), cert. denied, 489 U.S. 1077 (1989).

The Ninth Circuit notably did not itself embrace the district court's restrictive reading of "emergency," and it even acknowledged that an "emergency" can be "a situation demanding immediate attention." App. 45a n.41. Notwithstanding that acknowledgment—which should have been dispositive under *Auer*—the panel purported not to "adjudicate the meaning of the word 'emergency' here." *Ibid.* It instead affirmed the district court's interpretation of the "term's plain meaning" on the ground that the district court's analysis (though perhaps ultimately incorrect) did not rely on erroneous "legal principles" or reflect an abuse of discretion. *Ibid.* That approach to deference is precisely backwards. The interpretation of "emergency" by CEQ, not the district court, is entitled to deference under *Auer*.

And, while preliminary injunctions are generally reviewed for abuse of discretion, a lower court's legal rulings, like the one at issue here, are reviewed de novo. *Gonzales* v. *O Centro Espirita Beneficiente Uniao Do Vegetal*, 546 U.S. 418, 428 (2006). Accordingly, as other courts of appeals have held, a "decision to grant a preliminary injunction that is premised on an error of law *is entitled to no deference* and must be reversed." *Brotherhood of Maint. of Way Employes Div.* v. *Union Pac. R.R.*, 460 F.3d 1277, 1282 (10th Cir. 2006) (emphasis added); accord *Burlington N. & Santa Fe Ry.* v. *Brotherhood of Locomotive Eng'rs*, 367 F.3d 675, 678 (7th Cir. 2004); *Delta Air Lines, Inc.* v. *ALPA*, 238 F.3d 1300, 1308 (11th Cir.), cert. denied, 532 U.S. 1019 (2001); *Bell* v. *Sellevold*, 713 F.2d 1396, 1399 (8th Cir. 1983), cert denied, 464 U.S. 1070 (1984).

Indeed, the Ninth Circuit's interpretive approach to Section 1506.11 conflicts with that of the D.C. Circuit. The district court in *National Audubon Society* v. *Hester*, 801 F.2d 405 (D.C. Cir. 1986), preliminarily enjoined the capture of the last remaining wild California condors after concluding that no "emergency" warranted alternative arrangements under Section 1506.11 because the precipitous decline in condor populations that required urgent action had been recognized "more than eight months before the declaration of the emergency." *National Audubon Soc'y* v. *Hester*, 627 F. Supp. 1419, 1423 (D.D.C. 1986). The D.C. Circuit reversed, holding that the lower court "erred in deciding *itself* that no emergency existed" because CEQ's certification of an emergency based on "the urgent nature of the Wildlife Service's concerns with condor mortality" was "entitled to substantial deference." 801 F.2d at 408 n.3 (internal citation omitted). *A fortiori* such deference is required here, where national security and defense are at issue.

The seriousness of the Ninth Circuit's error is underscored by its view that it was permissible for the district court to disregard CEQ's "emergency" determination because "the Navy ha[d] been on notice of its possible legal obligations" to prepare an EIS and purportedly delayed until January 10, 2008 to seek emergency relief. App. 45a-46a. As just explained, the existence of "emergency circumstances" turns on the urgent need for prompt action. NEPA is to be implemented "consistent with other essential considerations of national policy," 42 U.S.C. 4331(b), and those "essential considerations" are not to be sacrificed based on a court's own notion of "notice."

Moreover, the Ninth Circuit's assessment of the Navy's actions was flawed even on its own terms. The Navy completed a robust EA and concluded in good faith that no EIS would be necessary for the exercises scheduled to occur prior to the completion of the comprehensive SOCAL EIS in January 2009. While the district court found that the Navy's conclusion was probably wrong, no emergency arose until the court so ruled and entered an injunction jeopardizing the Navy's ability to train strike groups effectively for deployment. The initial August 7, 2007 injunction was promptly stayed on appeal sufficiently before the Navy's next exercise was to commence, App. 175a, and when the Ninth Circuit subsequently remanded for entry of a narrower injunction, it noted that the Navy had previously used mitigation measures compatible with its training needs and directed the district court to issue an injunction "under which the Navy may conduct its training exercises." App. 173a-174a. It was not apparent until the district court issued its January 3, 2008 injunction that the court's restrictions—which go well beyond the mitigation measures employed by the Navy—significantly risked training essential to national security.

The President then immediately determined, in issuing an exemption from the CZMA, that the injunctive order "would undermine the Navy's ability to conduct realistic training exercises that are [both] necessary to ensure * * * combat effectiveness" and "essential to national security," App. 232a, and the CNO determined that the court's restrictions posed an "unacceptable risk" to the Navy's ability to train for overseas deployment necessary for national security. App. 81a, 343a-345a. The substantial and imminent harm to the public interest without the alternative NEPA arrangements in this case represent a quintessential example of "emergency circumstances."

Review by this Court of the Ninth Circuit's contrary ruling is warranted because of its serious impact on military readiness, the conflicting interpretation of "emergency" by other courts of appeals in a variety of settings, and the conflict with the D.C. Circuit's *Hester* decision in the specific context of the very CEQ regulation at issue here.

2. Even if the President's and CEQ's emergency actions responding to the injunction's restrictions had not eliminated the basis for respondent's NEPA claim, no preliminary injunctive relief would have been appropriate.

a. A court's equitable discretion to provide preliminary injunctive relief normally turns on a balancing of the relative hardships of the parties and the public interest once the movant has shown a likelihood of success on the merits. *Weinberger* v. *Romero-Barcelo*, 456 U.S. 305, 312 (1982); see *Amoco Prod. Co.* v. *Village of Gambell*, 480 U.S. 531, 546 n.12 (1987). However, when Congress has itself "decided the order of priorities in a given area," a court of equity must follow the "balance that Congress has struck" and lacks discretion to weigh independently its own conception of what factors are relevant to the public interest or the conveniences of the parties. *United States* v. *Oakland Can-*

nabis Buyers' Coop., 532 U.S. 483, 497 (2001) (quoting *TVA* v. *Hill*, 437 U.S. 153, 194 (1978)). The district court's conclusion that a preliminary injunction was necessary to prevent potential harms to marine mammals improperly "ignore[d] the judgment of Congress, deliberately expressed in" the MMPA, that the public interest lies in *permitting* military activity like that at issue here notwithstanding any potential to harm marine mammals. See *Virginia Ry.* v. *System Fed'n No. 40*, 300 U.S. 515, 551-552 (1937). That congressional "declaration of public interest and policy" is dispositive. *Ibid.*

The MMPA's prohibition on harassing, injuring, or killing marine mammals at sea reflects Congress's judgment that the public interest normally lies in protecting such mammals to preserve their esthetic, recreational, and economic value for the public. 16 U.S.C. 1361(6), 1362(13) and (18), 1371(a), 1372(a)(1) (2000 & Supp. V 2005). However, Congress has understandably determined that national security can trump marine mammal protection and has authorized the Secretary of Defense to exempt from the MMPA military activity "necessary for national defense," after consultation with the Secretary of Commerce and subject to congressional notification. 16 U.S.C. 1371(f). That authorization "properly balances the equities associated with military readiness and maritime species protection" by subordinating potential harm to marine mammals to the Nation's need for military readiness while assuring involvement by the agency charged with protecting marine mammals and oversight by the politically accountable Branches. See H.R. Conf. Rep. No. 354, 108th Cong., 1st Sess. 669 (2003) (*Conf. Rep.*). "Courts of equity cannot, in their discretion, reject th[at] balance." *Oakland Cannabis*, 532 U.S. at 497; see *Hill*, 437 U.S. at 194 ("[I]t is * * * the exclusive province of the Congress" to "formulate legisla-

tive policies and * * * establish their relative priority for the Nation."). Because the Deputy Secretary of Defense properly exempted the Navy's sonar activities from the MMPA, App. 219a-220a, subject to mitigation measures developed in consultation with NMFS, the courts below exceeded their authority by prohibiting the Navy's sonar use to prevent a potential harm to marine mammals (and respondents' enjoyment of such mammals) that the exemption expressly *authorized*.

Indeed, Congress enacted Section 1371(f)'s exemption authority in part in reaction to respondent NRDC's prior success in obtaining a preliminary injunction against the Navy's use of low-frequency active sonar. See *Conf. Rep.* 669. The court in *NRDC* v. *Evans*, 232 F. Supp. 2d 1003 (N.D. Cal. 2002), had "consider[ed] the public interests both in national security and in protecting marine mammals" and—like the courts below—issued what it regarded as "a carefully tailored preliminary injunction" to "permit[] the use of LFA sonar for testing and training" while imposing substantive restrictions "to reduce the risk to marine mammals and endangered species." *Id.* at 1013, 1051-1055. Congress's creation of a national defense exemption to the MMPA conclusively rejects such judicial balancing where, as here, the exemption authorizes activity even though it may be potentially harmful to marine mammals.

NEPA is, of course, only a procedural statute, *Methow Valley*, 490 U.S. at 350, 353 & n.16, and the substantive harms that justified a preliminary injunction in the district court's view are precisely those that Congress has determined must give way to considered concerns about national security. Moreover, an agency's compliance with NEPA is reviewed under the APA, which contemplates that, even where relief is warranted, either declaratory *or* injunctive relief may be appropriate, 5 U.S.C. 703, and expressly pre-

serves the "power or duty of the court * * * to deny relief on any * * * appropriate legal or equitable ground," 5 U.S.C. 702. Cf. *Ramirez de Arellano* v. *Weinberger*, 745 F.2d 1500, 1561 (D.C. Cir. 1984) (en banc) (Scalia, J., dissenting) (separation of powers problems associated with judicial interference with military training exercises abroad "make this virtually a textbook case for refusing * * * discretionary relief"), vacated on other grounds, 471 U.S. 1113 (1985); *Sanchez-Espinoza* v. *Reagan*, 770 F.2d 202, 208 (D.C. Cir. 1985) (Scalia, J.). Because Congress and the Secretary struck the controlling balance between military readiness and protection of marine mammals—and because the injunction in any event greatly interferes with training exercises determined by the President and his Chief of Naval Operations to be essential to national security—those provisions of the APA underscore the impropriety of the injunction affirmed by the Ninth Circuit.

We may assume *arguendo* that declaratory relief could be appropriate in this case under the APA, and that even limited equitable relief might be justified to advance other interests—*e.g.*, directing completion of an EIS to advance NEPA's procedural goals while sonar exercises go forward under CEQ's alternative arrangements. Cf. *Romero-Barcelo*, 456 U.S. at 308, 315, 318 (affirming injunction requiring Navy to obtain permit to "achieve [future] compliance with the [Clean Water] Act" while permitting bombing exercises to proceed without required permit). But no injunctive relief could properly bar the use of MFA sonar in the meantime—or be predicated on potential harm to marine mammals—in light of Congress's determination that the public interest requires subordinating the prevention of such environmental harm to national security needs. Cf. *Weinberger* v. *Catholic Action*, 454 U.S. 139, 145 (1981) ("[T]he public's interest in ensuring that federal agencies

comply with NEPA must give way to the Government's need to preserve military secrets.").

b. The Ninth Circuit additionally erred in holding that a showing of a "mere possibility" of irreparable harm justified preliminary injunctive relief. App. 74a-77a, 172a. Because a "preliminary injunction is an extraordinary and drastic remedy," *Mazurek* v. *Armstrong*, 520 U.S. 968, 972 (1997) (per curiam), whose "purpose * * * is merely to preserve the relative positions of the parties until a trial on the merits can be held," *University of Tex.* v. *Camenisch*, 451 U.S. 390, 395 (1981), the party seeking such an injunction must make a "clear showing" that temporary equitable relief is necessary. *Mazurek*, *supra*; see *Doran* v. *Salem Inn, Inc.*, 422 U.S. 922, 931 (1975) ("stringent" showing required).

The movant therefore carries a heavy burden not only of demonstrating that "he is likely to prevail on the merits" but also that "he *will* suffer irreparable injury" without injunctive relief. *Doran*, 422 U.S. at 931 (emphasis added); see *Ashcroft* v. *ACLU*, 542 U.S. 656, 666 (2004) ("likelihood of irreparable injury" required). That is especially so where, as here, the preliminary injunction would dramatically alter the status quo by requiring major changes in critical military training in the middle of a series of predeployment exercises. See *O Centro Espirita Beneficiente Uniao Do Vegetal* v. *Ashcroft*, 389 F.3d 973, 975-976 (10th Cir. 2004) (en banc) (preliminary injunction that would "alter the status quo" requires a "strong showing" both of likely success and an equitable balance), aff'd on other grounds, 546 U.S. 418 (2006).

The lower threshold of a mere "possibility" of irreparable harm (App. 76a-77a) not only is inconsistent with this Court's decisions, but also conflicts with the standard applied by other courts of appeals. See, *e.g.*, *Siegel* v. *LePore*,

234 F.3d 1163, 1176 & n.9 (11th Cir. 2000) (en banc) ("[T]he absence of a substantial likelihood of irreparable injury would, standing alone, make preliminary injunctive relief improper.") (following *Doran*); *Direx Israel, Ltd.* v. *Breakthrough Med. Corp.*, 952 F.2d 802, 812 (4th Cir. 1991) ("'clear showing' of irreparable injury" required); *Borey* v. *National Union Fire Ins. Co.*, 934 F.2d 30, 34 (2d Cir. 1991) ("mere possibility of irreparable harm is insufficient"); *Cordis Corp.* v. *Medtronic, Inc.*, 780 F.2d 991, 996 (Fed. Cir. 1985) (similar), cert. denied, 476 U.S. 1115 (1986).

The Ninth Circuit's application of a possibility-of-irreparable-harm standard led directly to the extraordinary preliminary injunction issued in this case. Article III remedies must redress an "injury to the plaintiff" rather than an "injury to the environment," *Friends of the Earth* v. *Laidlaw*, 528 U.S. 167, 180-181 (2000), and the court of appeals recognized that respondents must establish "irreparable harm to [their] membership" in order to obtain injunctive relief. App. 75a. Respondents assert that their members' enjoyment from observing marine mammals would be impaired if such wildlife were harmed. See App. 20a; Pls.' Standing Decls. in Supp. of Mot. for Prelim. Inj. (filed June 22, 2007). Respondents have no legally cognizable interest in individual members of a species. Accordingly, the "loss of only one [animal] is [not a] sufficient injury to warrant a preliminary injunction;" a plaintiff "must demonstrate 'a substantial likelihood of * * * irreparable harm'" to his own interests resulting from some form of "irretrievabl[e] damage [to] the species." *Fund for Animals* v. *Frizzell*, 530 F.2d 982, 986-987 (D.C. Cir. 1975); accord *Water Keeper Alliance* v. *Department of Defense*, 271 F.3d 21, 34 (1st Cir. 2001) (death of "single member of an endangered species" does not qualify as irreparable harm absent showing of how "probable deaths * * * may

impact the species"). Any finding of a irreparable injury therefore must rest upon the existence of permanent *species-level* harm that would materially affect the enjoyment of wildlife by respondents' members. The court of appeals concluded that respondents demonstrated such harm simply by establishing "the possibility of irreparable injury at the species or stock-level." App. 77a.[3]

Moreover, the Navy's 40-year history of conducting sonar exercises in SOCAL with MFA sonar using the same frequency and intensity as that used today, and the absence

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[3] The district court believed that respondents had established a "near certainty" of "irreparable harm to the environment and [their] standing declarants." App. 164a. That was not the premise of the Ninth Circuit's decision, which rested on the "possibility" of irreparable injury. The district court noted that respondents demonstrated that "MFA sonar *can* injure and kill marine mammals, and cause population-affecting levels of disruption," and pointed in large part to the Navy's EA. App. 163a, 216a-217a (emphasis added). But, as explained above, the EA's model predicted only *eight* injuries annually to one species (common dolphins) if the Navy failed to use its own mitigation measures. The court's reference to population-affecting levels of "disruption" thus necessarily referred to predicted temporary, non-injurious "Level B" harassments (see E.R. 400-401), the vast majority of which would be avoided using the Navy's NDE II mitigation measures and, in any event, were predicted to be temporary, short-term, and "highly unlikely" to cause "behavioral patterns [to be] abandoned or significantly altered." See pp. 6-7, *supra*.

These findings are confirmed by NMFS's independent conclusion in January 2008 that, while the SOCAL exercises involve "some potential for injury" that could be minimized with the Navy's protective measures, the exercises were only "likely to elicit temporary behavioral responses from marine mammals" (such as "alerting responses," "temporary movement away from sound sources," or "temporary cessation of feeding or breeding activities") and were not expected to cause any "adverse population level effects for *any* * * * marine mammal populations." App. 258a (emphasis added).

of any documented incidents of sonar-related harm to marine mammals in SOCAL (see pp. 7-8, *supra*), should have sufficed to foreclose the kind of injunctive relief entered below. Indeed, the court of appeals acknowledged that "the record contains no evidence that marine mammals have been harmed from the use of MFA sonar in [SOCAL]," but sought to justify its affirmance by observing that such harms might be hard to detect. App. 76a; see App. 22a-23a. Even assuming that to be correct, the absence of evidence cuts still further against any injunction, because respondents bore the burden of showing that they "will suffer irreparable injury" without the preliminary injunction. *Doran*, 422 U.S. at 931.

c. The Ninth Circuit's distortion of equitable principles extended still further to the court's approach to balancing the hardships of the parties and the public interest. In this case, the balance could not be more clear. The United States is "currently engaged in war, in two countries," App. 182a, and many of the same men and women who must train in SOCAL must conduct daily aircraft missions or deploy into Iraq and Afghanistan from Navy strike groups. In the judgment of those responsible for their training and safety, including the President and the CNO, the preliminary injunction presents an unacceptable risk to training effectiveness and the national security of the United States. App. 231a-232a, 342a-347a. Congress has similarly determined that the public interest in protecting marine mammals must be subordinated to the interest in military preparedness activity where, as here, the Department of Defense has determined an MMPA exemption is "necessary for national defense." 16 U.S.C. 1371(f); see pp. 23-24, *supra*. That statutory provision alone defeats any basis for an injunction. But in any event, "no governmental interest is more compelling than the security of the Nation," *Haig* v.

Agee, 453 U.S. 280, 307 (1981) (quoting *Aptheker* v. *Secretary of State*, 378 U.S. 500, 509 (1964)), and, in this case, the mere "possibility" of irreparable harm to the enjoyment of marine mammals cannot remotely outweigh that interest.

The Ninth Circuit itself recognized the "possibility" that the Navy would be unable to effectively train and successfully certify a strike group under the preliminary injunction. App. 88a-89a. But it decided that that "possibility" must become a reality before the Navy "may return to the district court to request relief on an emergency basis," since the Navy's prediction of harm to national security based on the professional military judgments of the Nation's top naval officers will be "necessarily speculative" until the Navy actually operates under the injunction's restrictions. App. 80a, 88a-89a.

Absent from that analysis is any attempt to weigh the *magnitude* of potential harm to one party against the harm to the other. The harm to the Navy and the public interest from the injunction is palpable. The Navy centers its global management of strategic naval forces around a strike group's timely preparation for deployment, and the inability to certify a single strike group during a scheduled COMPTUEX and JTFEX, particularly at a time of war, would severely undermine the United States' ability to conduct warfare operations and have enormous adverse implications for national security. App. 314a-325a; see App. 343a-344a; 73 Fed. Reg. at 4191; E.R. 1156. Such risk of harm to the national security must be given great weight in any equitable balancing. The potential impact on the safety of Sailors and Marines deployed abroad or on their ability to carry out vital operations in a climate with no margin for error cannot be dismissed as mere "speculation." The consequences of the potential becoming a reality are simply too great.

Furthermore, assessing the acceptable degree of risk to the effectiveness of military training is precisely the type of professional military judgment the judiciary should avoid. *Gilligan* v. *Morgan*, 413 U.S. 1, 10 (1973). "[I]t is difficult to conceive of an area of governmental activity in which the courts have less competence," *ibid.*, particularly where the evaluation of threats to national security must rest on "[p]redictive judgment[s] * * * made by those with the necessary expertise." *Department of Navy* v. *Egan*, 484 U.S. 518, 529 (1988). The Ninth Circuit neglected to heed those familiar admonitions, second-guessing the judgments of the President, CNO, and other naval officers to which it owed great deference. See *Goldman* v. *Weinberger*, 475 U.S. 503, 507 (1986); *Rostker* v. *Goldberg*, 453 U.S. 57, 66 (1981).

The CNO has explained that, in his professional judgment, two provisions of the preliminary injunction in particular create unacceptable risk of harm to national security. First, the injunction requires that sonar operations terminate whenever a marine mammal is detected within 2200-yards (1.25 miles). That distance is eleven times greater than the existing shutdown distance developed in consultation with NMFS and employed by the Navy, and will increase the surface area within which a marine mammal's presence will force a sonar shutdown by a factor of over 100. App. 226a, 332a, 344a-345a. Both the Ninth Circuit and the district court rejected the CNO's risk assessment because the Navy has occasionally shutdown voluntarily at similar distances when the tactical circumstances allowed. App. 83a-84a. But it is one thing to voluntarily accommodate environmental concerns when it will not endanger the exercise and quite another to be under a *mandatory* judicial order to discontinue sonar operations, especially at a critical juncture. The courts should have credited the

Navy's willingness to avoid harm when possible rather than displacing the judgments of the CNO and other high-ranking naval officers that the 2200-yard mandatory shutdown requirement would unacceptably risk training and national security. App. 332a, 344a-346a, 353a-357a; see App. 269a-271a, 279a-285a.

Similarly, the Ninth Circuit concluded that requiring a six decibel (75%) reduction in sonar power in significant surface ducting conditions would not likely prevent effective training because "such conditions occur relatively rarely" in SOCAL. App. 86a. But the threat to effective training does not result simply from preventing surface-ducting sonar training. Rather, the unacceptable risk primarily stems from the fact that surface ducting cannot be effectively predicted in advance, and requiring the unexpected power-down of all ships in a strike group when significant surface ducting conditions arise—without regard to the tactical significance of the timing, the length of time such conditions may persist, or the presence of any marine mammal—would "prevent[] realistic training." App. 299a-300a, 333a, 342a-345a; pp. 5-6, *supra*.

3. The Ninth Circuit thus fundamentally erred in failing to respect the Executive's judgment that "emergency circumstances" exist under NEPA and at every step of the analysis of the propriety of injunctive relief. It did so, moreover, in a manner that conflicts with the judgment of Congress, the President, and the Nation's top naval officers as well as decisions of this Court and other courts of appeals. For these reasons, and because of the ensuing harm to the national security, review by this Court is warranted.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted.

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APPENDIX

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No.

In the Supreme Court of the United States

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., PETITIONERS

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNTIED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

APPENDIX TO THE PETITION FOR A WRIT OF CERTIORARI

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APPENDIX A

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 08-55054
D.C. No. CV-07-00335-FMC

NATURAL RESOURCES DEFENSE COUNCIL, INC.; THE INTERNATIONAL FUND FOR ANIMAL WELFARE; CETACEAN SOCIETY INTERNATIONAL; LEAGUE FOR COASTAL PROTECTION; OCEAN FUTURES SOCIETY; JEAN-MICHEL COUSTEAU, PLAINTIFFS-APPELLEES

CALIFORNIA COASTAL COMMISSION, INTERVENOR-APPELLEE

v.

DONALD C. WINTER, SECRETARY OF THE NAVY; UNITED STATES DEPARTMENT OF THE NAVY; CARLOS M. GUTIERREZ, SECRETARY OF THE DEPARTMENT OF COMMERCE; NATIONAL MARINE FISHERIES SERVICES; WILLIAM HOGARTH, ASSISTANT ADMINISTRATOR FOR FISHERIES OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION; CONRAD C. LAUTENBACHER, JR., ADMINISTRATOR OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION, DEFENDANTS-APPELLANTS

Appeal from the United States District Court
for the Central District of California
Florence Marie Cooper, District Judge, Presiding

Argued and Submitted: Feb. 27, 2008
Pasadena, California

[Filed: Feb. 29, 2008]

OPINION

Before: B. FLETCHER, D.W. NELSON, and REINHARDT, Circuit Judges.

Opinion by Judge B. FLETCHER, Circuit Judge:

Defendants Secretary of the Navy, Department of the Navy, Secretary of the Department of Commerce, National Marine Fisheries Service (NMFS),[1] and two Administrators of the National Oceanographic and Atmospheric Administration (NOAA) appeal the district court's January 3, 2008 order, as modified on January 10, 2008, granting a motion for a preliminary injunction and imposing certain conditions on the completion of the remaining eight of fourteen large training exercises scheduled to be conducted by the Navy's Third Fleet in the waters off the coast of southern California between February 2007 and January 2009 (the "SOCAL exercises").[2] The motion was filed by plaintiffs Natural Resources Defense Council, Inc., International Fund for Animal Welfare, Cetacean Society International, League for Coastal Protection, Ocean Futures Society, and

[1] The National Marine Fisheries Service has now been renamed "NOAA Fisheries." Because many of the documents refer to the agency by its former name, it shall be referred to as "the NMFS" throughout this opinion.

[2] While the district court imposed the injunction when the Navy had yet to conduct nine training exercises, it issued a temporary partial stay of its injunction on January 17, 2008, after which the Navy conducted its sixth exercise. Accordingly, only eight of the fourteen scheduled exercises have not yet been conducted.

Jean-Michel Cousteau (collectively "NRDC" or "plaintiffs"), who are concerned that the Navy's use of high-intensity, mid-frequency active sonar ("MFA sonar") in the SOCAL exercises will cause serious harm to various species of marine mammal present in the southern California waters, and by extension, to plaintiffs themselves.

In granting NRDC's motion for a preliminary injunction, the district court found that NRDC had demonstrated probable success on the merits of its claim that the Navy violated the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq.*, by failing to prepare an Environmental Impact Statement ("EIS"). The district court also found that NRDC had demonstrated probable success on the merits of its claim that the Navy violated the Coastal Zone Management Act ("CZMA"), 16 U.S.C. § 1451 *et seq.*, by submitting a consistency determination to the California Coastal Commission ("CCC") that did not take into account the planned use of MFA sonar and by failing to adopt the mitigation measures the CCC determined were necessary for the SOCAL exercises to be consistent with the California Coastal Management Program ("CCMP").

On January 15, 2008, the Council on Environmental Quality ("CEQ") purported to approve "alternative arrangements," pursuant to 40 C.F.R. § 1506.11, that would permit the Navy to continue its exercise without first completing an EIS. On the same day, President George W. Bush, pursuant to 16 U.S.C. § 1456(c)(1)(B), exempted from the requirements of the CZMA the Navy's use of MFA sonar in the SOCAL exercises.

On February 4, 2008, the district court upheld its injunction on the basis of plaintiffs' NEPA claim, con-

cluding CEQ's action was invalid and therefore not entitled to deference. The district court also expressed concerns about the constitutionality of the President's CZMA exemption on the ground that it appeared to amount to an executive revision of a judicial decision and thus violated the principle, recognized in *Hayburn's Case*, 2 U.S. (2 Dall.) 408 (1792), that Congress cannot vest review of the decisions of Article III courts in officials of the Executive Branch. However, the court declined to decide the constitutionality of the CZMA exemption because it concluded the preliminary injunction was firmly supported on NEPA grounds.[3] The district court also found that plaintiffs had demonstrated a possibility of irreparable harm and that the balance of hardships tipped in plaintiffs' favor. *Natural Res. Def. Council v. Winter*, — F. Supp. 2d —, 2008 WL 314192 (C.D. Cal. Feb. 4, 2008) ("Feb. 4, 2008 Dist. Ct. Order").

For the reasons stated below, we uphold the district court's preliminary injunction.

I. Procedural History

Plaintiffs commenced this action on March 22, 2007. On August 7, 2007, the district court granted in part NRDC's motion for a preliminary injunction and enjoined the Navy from conducting the then remaining eleven SOCAL exercises.[4] After appealing the district

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[3] Because the district court did not rule on the likelihood of success of plaintiffs' CZMA claim in light of the President's exemption, we decline to reach that issue.

[4] The district court granted NRDC's motion only in part because it found that NRDC had not demonstrated probable success on the merits of its additional claim that the NMFS and the other non-Navy defendants had failed to prepare an adequate Biological Opinion and

court's preliminary injunction order,[5] the Navy filed an emergency motion with this court for a stay of the order while its appeal was pending. On August 31, 2007, a divided motions panel granted the Navy's motion on the grounds that the district court had failed to consider the "public interest" in having a trained and effective Navy and had failed to explain why an unconditional injunction on the SOCAL exercises, rather than an injunction conditioning the conduct of those exercises on the adoption of additional mitigation measures, was appropriate. *NRDC v. Winter*, 502 F.3d 859 (9th Cir. 2007).

On November 13, 2007, after hearing oral argument, we filed an order concluding that NRDC had met the necessary burden of proof to demonstrate that some form of preliminary injunctive relief was appropriate. Accordingly, we vacated the stay of the preliminary injunction order effective upon the Navy's completion of its fifth SOCAL exercise, which was in progress at the time of oral argument. However, we also concluded that an injunction conditioning continuation of the exercises on the Navy's adoption of narrowly tailored mitigation measures would be more appropriate than a total injunction. Accordingly, we remanded the case for the district court to enter a modified preliminary injunction containing appropriate mitigating measures. *NRDC v. Winter*, 508 F.3d 885 (9th Cir. 2007).

Incidental Take Statement in violation of the Endangered Species Act and the Administrative Procedure Act. NRDC has not appealed that portion of the district court's ruling.

[5] The CCC has intervened as appellee in this action.

On January 3, 2008, the district court, after having received briefing from the parties and having toured the destroyer *USS Milius* at the naval base in San Diego, California, to improve its understanding of the Navy's sonar training procedures and the feasibility of the parties' proposed mitigation measures, issued a new preliminary injunction that allowed the Navy to conduct the remaining SOCAL exercises provided that it employ certain measures intended to mitigate the impact of the Navy's use of MFA sonar on the environment. On January 9, 2008, the Navy applied for a stay pending appeal and requested relief from the district court by January 14, 2008.

On January 10, 2008, in response to arguments raised in the Navy's stay application, the district court modified the preliminary injunction by narrowing the mitigation measures contained in the January 3, 2008 order. The Navy filed a notice of appeal the following day. The district court denied the Navy's stay application on January 14, 2008.

On the evening of January 15, 2008, the Navy filed an emergency motion with this court requesting vacatur of the preliminary injunction or, alternatively, a partial stay of the preliminary injunction pending a decision on its appeal by our court. The Navy's motion was based in part on two developments that occurred on the same day that the motion was filed. First, the President of the United States, pursuant to 16 U.S.C. § 1456(c)(1)(B), exempted from the provisions of the CZMA the Navy's use of MFA sonar during the SOCAL exercises, finding that such use of MFA sonar is "essential to national security" and in the "paramount interest of the United States." Second, the CEQ, finding "emergency circum-

stances," purported to approve "alternative arrangements" to accommodate those emergency circumstances, pursuant to 40 C.F.R. § 1506.11. It permitted the Navy to follow the prescribed arrangements to continue its exercises pending completion of the Navy's EIS. The Navy subsequently adopted the alternative arrangements and determined that it would comply with them. *See* Decision Memorandum Accepting Alternative Arrangements for the U.S. Navy's Southern California Operating Area Composite Training Unit Exercises and Joint Task Force Exercises Scheduled To Occur Between Today and January 2009, 73 Fed. Reg. 4189 (Jan. 24, 2008).

On January 16, 2008, we remanded the matter to the district court to consider in the first instance the effect, if any, of these developments on its preliminary injunction order. On January 17, 2008, the district court issued a temporary partial stay of its preliminary injunction order pending the court's consideration of the Navy's *ex parte* application to vacate the preliminary injunction. The Navy subsequently conducted its sixth SOCAL exercise.

On February 4, 2008, following briefing by the parties and oral argument, the district court denied the Navy's application to vacate the preliminary injunction and lifted the temporary partial stay. In its published order, the district court held in relevant part that CEQ's approval of "alternative arrangements" was invalid because there are no "emergency circumstances" within the meaning of 40 C.F.R. § 1506.11. Feb. 4, 2008 Dist. Ct. Order at 13-25. Thus, the district court left in place the original preliminary injunction. The Navy filed a notice of appeal two days later.

On February 8, 2008, we issued a *sua sponte* order expediting the appeal of the district court's order imposing the preliminary injunction. On February 15, 2008, the Navy filed an emergency motion for a partial stay of the preliminary injunction pending our consideration of the appeal on the ground that the injunction would interfere with the Navy's conduct of two exercises in March, 2008. On February 19, 2008, we denied the Navy's motion for a partial stay in light of our order expediting the appeal, which set oral argument for Wednesday, February 27, 2008. We now affirm the district court's order imposing the preliminary injunction.

II. Factual Background

A. The SOCAL Exercises and the Effect of MFA Sonar on Marine Mammals

The scheduled SOCAL exercises consist of seven Composite Training Unit Exercises ("COMPTUEX"), which last three to four weeks each, and seven Joint Tactical Force Exercises ("JTFEX"), which last approximately ten days each. The exercises, which involve the use of multiple surface ships, aircraft and submarines, are part of the "integrated" training phase of the Navy's Fleet Response Training Plan, in which individual naval units—ships, submarines and aviation squadrons—learn and demonstrate skills as members of a strike group.[6]

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[6] The Navy employs two types of strike groups. A carrier strike group generally consists of an aircraft carrier and five surface combatant ships. May decl. ¶ 5. An expeditionary strike group includes surface combatant ships and an amphibious ready group. *Id.*

A strike group starts developing skill sets at the individual ship, submarine, or aviation squadron level by conducting unit-level training. *Id.* ¶ 6. As skill levels increase, units coordinate training with other units. *Id.* Prior to commencing the "integrated" phase of the Navy's

Declaration of Captain Martin N. May ("May decl.) ¶ 6. In a COMPTUEX exercise a strike group must demonstrate that it is capable of operating in a "complicated threat-based scenario environment that simulates real world situations." *Id.* In a JTFEX exercise, which follows the COMPTUEX exercise and typically includes other Department of Defense services and Allied Forces, the focus is on "mission planning and strategy and on the orchestration of integrated maneuvers, communication and coordination." *Id.* ¶ 7. Upon completion of the integrated training phase the Fleet Commander is able to certify that a strike group is ready for deployment. *Id.*

According to the Navy, the ability to execute anti-submarine warfare ("ASW") is critical to a Commander's certification of a strike group. *Id.* Improving ASW is the Pacific Fleet's top "war-fighting" priority because of the proliferation of extremely quiet diesel electric submarines throughout the world.[7] *Id.* ¶ 11; Dec. 14, 2007

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training plan, the individual units comprising a strike group must be trained and attain proficiency in the "basic" phase of the training plan. *Id.* ¶ 25. During the "integrated" training phase, an individual unit learns and demonstrates skills as a team member of the strike group. Following completion of the "integrated" phase, strike groups enter the "sustainment" phase of the training plan. *Id.* This phase continues through the strike group's scheduled deployment and post-deployment periods and ends with the commencement of the "maintenance" phase, during which the ships comprising the strike group undergo maintenance and modernization. *Id.* ¶¶ 24, 25.

[7] We note that neither quiet submarines, nor the use of active sonar to detect them, are new technologies. According to the Navy's Environmental Assessment ("EA"), active sonar was used effectively against German U-boats during World War II, and during the Cold War technological developments in active sonar were "critical" for tracking sophisticated Soviet submarines. [ER 66.]

Declaration of Rear Admiral John M. Bird ("Bird Decl") ¶ 16. In turn, an important part of ASW is the use of active sonar, a technology which the Navy deems absolutely necessary to detect today's extremely quiet submarines. The type of active sonar, the use of which NRDC challenges, is mid-frequency active sonar; other categories of active sonar are low-frequency active sonar and high-frequency active sonar.[8]

Active sonar involves a vessel or other sonar source emitting a loud noise underwater and then listening for whether the noise comes back to the source, indicating that the noise may have bounced off the hull of a previously undetected submarine. According to the Navy, active sonar has two important advantages over passive sonar, which merely involves listening for noise made by submarines themselves: active sonar gives both the bearing and the distance of the target submarine, while passive sonar gives only the bearing;[9] and active sonar allows the Navy to target submarines that emit sound at levels below those of the surrounding marine environment. Bird decl. ¶ 9. Accordingly, the Navy has concluded that in certain environments, including shallow coastal waters where ambient noise levels are high, MFA sonar allows better detection of quiet submarines than passive sonar. May decl. ¶¶ 9, 14.

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[8] According to the Navy, low-frequency active sonar is transmitted at frequencies between 0.1 kHz and 1.0 kHz; mid-frequency active sonar at frequencies between 1.0 kHz and 10.0 kHz; and high-frequency active sonar at frequencies greater than 10.0 kHz. Bird decl. ¶ 12; May decl. ¶ 9.

[9] Active sonar allows a calculation of the distance of a target submarine by considering the speed at which the sonar sound moves through water and the time it takes for emitted sonar sound to travel to the target and back. Bird decl. ¶ 12.

According to the Navy, personnel using MFA sonar must train with it regularly, under realistic conditions, and in a variety of situations. May decl. ¶ 10. The Navy therefore trains with MFA sonar in the ASW exercises that constitute an important component of the SOCAL exercises.

The SOCAL exercises are conducted in the Navy's training ranges off the coast of southern California ("the Southern California Operating Area"). This area is located in biologically diverse waters. At least thirty-seven species of marine mammals are found there, with the most common being various species of dolphin and whale, as well as the California sea lion. Nine of those species are listed as threatened or endangered under the Endangered Species Act ("ESA"), 16 U.S.C. § 1531 *et seq.*: the blue whale, fin whale, humpback whale, Northern Pacific right whale, sei whale, sperm whale, sea otter, Stellar sea lion, and Guadalupe fur seal. In addition, up to eight species of beaked whale are found in the Southern California Operating Area. A study submitted by NRDC classifies the California coastal waters as a "key area" for beaked whales because over 25% of all beaked whale species are found there.[10]

The Navy acknowledges in its EA that MFA sonar may affect both the physiology and behavior of marine mammals. Exposure to "very high" acoustic energy levels may impair the functioning of marine mammals' visual system, vestibular system and internal organs, and

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[10] According to the study, the "key area" in southern California comprises the Californian shelf margins, which the study defines as the area west of the Californian coast up until the 125.0 degree longitude. Navy maps in the record show that the Southern California Operating Area falls largely within this area. [See, e.g., ER 349-50].

may cause injury to their lungs and intestines. However, the primary physiological effects of MFA sonar are on marine mammals' auditory system: very high sound levels may rupture the eardrum or damage small bones in the middle ear, but even exposure to lower levels of sound may cause permanent or temporary hearing loss.

Several studies suggest that active sonar may also cause a form of decompression sickness (or the "bends") in marine mammals by inducing growth of gas bubbles in their blood stream or tissues, potentially leading to fatal hemorrhaging, lesions and emboli in the organs. However, the Navy disputes the conclusions of these studies and it has submitted a declaration by an expert on marine mammal auditory systems stating that decompression sickness requires super-saturation of tissue with gas and that such super-saturation has not been shown to occur in marine mammals. *See* Declaration of Dr. Darlene R. Ketten ("Ketten decl.") ¶¶ 12-16.

The Navy also acknowledges that the use of MFA sonar may overtly disrupt the normal behavior of marine mammals even if it does not affect their physiology. While the Navy acknowledges that active sonar may cause behavioral responses such as attempting to avoid the site of sound exposure, swimming erratically, sluggish behavior, tail slapping, "jaw popping," and aggressive behavior, those responses were observed in studies using trained animals held in captivity.[11] NOAA concluded in 2006 that studies of marine mammals in the

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[11] These behavioral responses were observed in a study to which the EA cites for the effects of MFA sonar on marine mammals. *See* J.J. Finneran and C.E. Schlundt, *Effects of Intense Pure Tones on the Behavior of Trained Odontocetes*, Space and Naval Warfare Systems Center, San Diego, Technical Document (September 2004).

wild "strongly suggest" that the use of sonar at levels lower than those found to produce behavioral effects in the tests of captive animals can result in "profound" behavioral alterations, including changes in feeding, diving, and social behavior. In a February 9, 2007 Biological Opinion concerning the SOCAL exercises,[12] the NMFS found that acoustic exposures can impair marine mammals' foraging ability and their ability to detect predators or communicate. The NMFS cited studies finding that noise has caused whales to move away from their feeding and mating grounds and migration routes, and to change their calls.

As the record demonstrates, substantial evidence suggests that beaked whales are particularly vulnerable to MFA sonar. While it is not settled what causes this vulnerability,[13] it is clear that use of MFA sonar may lead to the stranding of beaked whales. A 2004 Navy-sponsored study concluded that "the evidence of sonar causation is

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[12] The NMFS issued the Biological Opinion pursuant to section 7(a)(2) of the Endangered Species Act ("ESA"), 16 U.S.C. § 1536(a)(2), which concluded that while the SOCAL exercises might "adversely affect" certain threatened and endangered species, the exercises were not "likely to jeopardize the [species'] continued existence." The NMFS also issued an Incidental Take Statement under which harm done to animals of the threatened or endangered species would be excused under the ESA as incidental.

[13] A 2004 Navy-sponsored study investigated several possible explanations for beaked whales' vulnerability to MFA sonar, including that beaked whales have a specialized anatomy, possibly due to their deep diving, which renders them especially sensitive to sound, and that beaked whales are "especially skittish" such that loud, reverberant acoustic fields cause "uncontrolled attempts to escape." The study concluded that the latter explanation was the most likely to be correct, but that this conclusion could change "as more research is done on this problem."

. . . completely convincing and that therefore there is a serious issue of how best to avoid/minimize future beaching events." Likewise, the Standing Working Group on Environmental Concerns of the International Whaling Commission's Scientific Committee concluded in 2004 that "[t]he weight of accumulated evidence now associates mid-frequency, military sonar with atypical beaked whale mass strandings," and found that "[t]his evidence is very convincing and appears overwhelming."

A 2006 study cited as possible explanations for the association between MFA sonar and strandings of beaked whales that (1) beaked whales may swim into shallow waters to avoid the sonar sound and strand if they are unable to navigate back to deeper waters, and (2) that behavioral responses to sonar may lead to tissue damage that in turn leads to stranding. The study explains that while a stranding need not be fatal, stranded marine mammals have died from cardiovascular collapse due to hyperthermia or from the stress associated with the stranding.

Several mass strandings of marine mammals—mostly, though not exclusively, beaked whales—have been associated with the use of active sonar. Another 2006 study describes a stranding of twelve beaked whales in Greece in 1996, a stranding of seventeen marine mammals (including fourteen beaked whales) in the Bahamas in 2000, and a stranding of fourteen beaked whales in the Canary Islands in 2002,[14] all of which occurred at the same time and place as the naval use of MFA sonar. The

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[14] Notably, the study states that after the stranding in the Canary Islands, local researchers examined past stranding records and found reports of eight other strandings of beaked whales in the Canaries since 1985, at least five of which coincided with naval activities offshore.

study also recounts a stranding of three beaked whales in the Madeira Islands in 2000, which coincided with NATO's conduct of naval exercises,[15] as well as a stranding of two beaked whales in the Gulf of California, Mexico, in 2002, which coincided with the conduct of seismic surveys involving, among other acoustic sources, a multi-beam, high-frequency sonar. In addition, a 2006 report by the NMFS recounts that 150 to 200 melon-head whales stranded in a Hawaiian bay in 2004, at the same time and place as the Navy's use of active sonar as part of its biennial Rim of the Pacific (RIMPAC) exercise.[16]

Necropsies of the dead whales involved in the Bahamas, Canary Islands and Madeira Islands strandings revealed hemorrhages in and around the ears, in the cranial spaces, and in other parts of the body such as the jaw fat, lungs and kidneys. In a joint report, the Navy and NOAA concluded that the injuries to the whales that stranded in the Bahamas constituted "some sort of acoustic or impulse trauma," and that the Navy's use of MFA sonar was the "most plausible" source of that trauma. The International Whaling Commission agreed that the

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[15] According to the study, NATO has been unwilling to provide information on its sonar activity during the Madeira Island exercises.

[16] The RIMPAC exercises have been conducted biennially since 1968 in the "Hawaiian operating area" and are intended to enhance the communication and coordination between Pacific Rim armed forces "as a means of promoting stability in the region to the benefit of all participating nations." Bird decl. ¶ 34. Unlike the JTFEX and COMPTUEX exercises, the RIMPAC exercises are not part of the "integrated" phase of the Fleet Response Training Plan; they are focused on command and control among the nations involved, and not focused on certifying strike groups for deployment. *Id.* However, like the JTFEX and COMPTUEX exercises, the RIMPAC exercises include ASW training that involves the use of MFA sonar.

hemorrhages in the inner ears and cranial spaces were consistent with "direct acoustic effects."

According to a biologist on whose declaration NRDC relies, the use of MFA sonar in the Bahamas may also have had a serious effect on the local population of beaked whales. *See* Declaration of Dr. Hal Whitehead. The biologist cites a study showing that no Cuvier's beaked whales were sighted for twenty months following the stranding in the Bahamas, despite an increased survey effort. *Id.* ¶ 8. He also cited studies showing that of the Cuvier's beaked whales that had been photo-identified over a nine-year period, only a few have been sighted since the stranding in 2000. *Id.*

With respect to the stranding of the melon-head whales in Hawaii, the NMFS issued a report concluding that "[w]hile causation of this stranding event may never be unequivocally determined, we consider the active sonar transmissions . . . a plausible, if not likely, contributing factor in what may have been a confluence of events."

Undoubtedly, many training exercises involving the use of active sonar occur around the world without marine mammal strandings being observed or reported. However, a declaration by a NOAA scientist submitted by the Navy acknowledges that it is generally poorly understood in which combinations of physical and biological circumstances such strandings are likely to occur. Declaration of Brandon L. Southall ¶ 19. The declaration also acknowledges that whether marine mammal strandings are observed depends on the extent to which people are looking for them. *Id.*

B. The Navy's EA and the Predicted Harm to Marine Mammals in the Southern California Waters

In February 2007, the Navy issued an Environmental Assessment ("EA") for the SOCAL exercises pursuant to NEPA. *See* 40 C.F.R. § 1501.3. The EA set forth the Navy's estimate of how much harm the use of MFA sonar would inflict on marine mammals, classifying the harm as either "Level A harassment" or "Level B harassment."

Level A harassment is an act that physically injures the marine mammal. Level A harassment refers to an exposure to MFA sonar that "injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild." Injury is defined as any destruction or loss of any biological tissues, and includes permanent hearing loss.

Level B harassment is an act that disrupts the behavior of a marine mammal. Level B harassment refers to an exposure to MFA sonar that "disturbs or is likely to disturb a marine mammal or marine mammal stock by causing disruption of natural behavioral patterns including, but not limited to, migration, surfacing, nursing, feeding, or sheltering to a point where such behaviors are abandoned or significantly altered." Notably, Level B harassment may also, though it need not, include temporary hearing loss.

The behavioral effects that result from Level B harassment may have severe consequences. According to the Biological Opinion of the NMFS, acoustic exposures can result in the death of a marine mammal by impairing its foraging or its ability to detect predators or communicate by increasing stress or by disrupting important physiological events.

In its EA, the Navy classified predicted sonar exposures as either Level A harassments or Level B harassments based on the sound intensity to which a marine mammal would be exposed. For cetaceans—which include whales and dolphins and which are the focus of NRDC's challenge to the SOCAL exercises—the Navy applied the following "impact thresholds": it classified as Level A harassments exposures to sonar levels of 215 decibels (dB) or greater, as Level B harassments including temporary hearing loss exposures to sonar levels between 195 dB and 215 dB, and as Level B harassments not including temporary hearing loss exposures to sonar levels between 173 dB and 195 dB.[17]

Significantly, the Navy acknowledged in the EA that it does not know whether the above impact thresholds apply to beaked whales. Recognizing the recent beaked whale strandings and the fact that the exact causes of those strandings are unknown, the Navy concluded that "separate, meaningful impact thresholds cannot be derived specifically for beaked whales." Put simply, the Navy did not know whether exposure of a beaked whale to an acoustic energy of less than 215 dB might nevertheless cause permanent injury to the whale. Accordingly, the Navy took a "conservative approach" and counted all predicted Level B exposures of beaked whales as non-lethal Level A exposures. Thus, the Navy treated every predicted exposure of a beaked whale to a

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[17] The EA expressed the impact thresholds in terms of "energy flux density level," which is a measure of the flow of sound energy through an area, or, more formally, the time integral of the squared pressure divided by the impedance. Energy flux density is expressed in units of decibels referenced to the pressure and duration of the sound, e.g., 215 dB re 1 μPa^2-s. For convenience, we express the impact thresholds, and exposures to MFA sonar generally, only in units of decibels.

sonar level of 173 dB or greater as causing physical injury including permanent hearing loss.

In its EA, the Navy estimated that over the course of the SOCAL exercises, the use of MFA sonar would result in 564 instances of Level A harassment to marine mammals, 548 of which would be to beaked whales.[18] Specifically, the following species would be subjected to Level A harassments: Cuvier's beaked whales in 436 instances; Ziphiid beaked whales in 104 instances; common dolphins in 16 instances; and Baird's beaked whales in 8 instances.[19]

The Navy also estimated that the use of MFA sonar would result in 8,160 exposures to Level B harassment with temporary hearing loss and 161,368 exposures to Level B harassment without hearing loss. Eight marine mammal species, including one endangered species, would be exposed to over 1,000 incidents of Level B harassment: 145,444 exposures to common dolphins; 6,460 exposures to Northern Pacific right whale dolphins; 4,292 exposures to Risso's dolphins; 4,100 exposures to Pacific

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[18] The statements in the EA that "[t]he modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A harassment" of beaked whales will occur is not to the contrary. As explained above, the Navy acknowledged in the EA that it did not know whether the impact thresholds it established for cetaceans generally also applied to beaked whales. Accordingly, the Navy decided that although its harassment model using those impact thresholds did not predict any Level A harassments to beaked whales, it would nevertheless treat all predicted Level B harassments to beaked whales as Level A harassments.

[19] These figures appear in the EA's Appendix A; the slightly different figures cited by the parties and the district court appear to be incorrect because they fail to account for 98 instances of Level A harassment to Ziphiid whales.

white-sided dolphins, 3,252 exposures to striped dolphins; 1,830 exposures to pygmy sperm whales (endangered); 1,094 exposures to Pantropical spotted dolphins; and 1,092 exposures to bottlenose dolphins.

In light of the harm that marine mammals are expected to suffer as a result of the SOCAL exercises, plaintiffs contend that they and their members living in southern California will be harmed. For example, plaintiff Jean-Michel Cousteau alleges that as an environmental enthusiast and film-maker his ability to enjoy and educate others about the marine environment in southern California will be impaired if the harmful effects of MFA sonar on marine mammals are not sufficiently mitigated. Other plaintiffs make similar allegations.

The Navy stated in the EA that it "assumed" that its methodology for estimating harm overestimated the effects of MFA sonar on marine mammals, citing the lack of observed effects during several past major exercises. However, the EA also maintained that the methodology used was based on the "best available science," and it provided no indication of the extent to which its methodology overestimated the effects of MFA sonar. In fact, there is at least some evidence that the Navy's methodology may have *underestimated* the effects of MFA sonar on marine mammals. NRDC has submitted declarations of several scientists who cite evidence that extraordinary behavior in marine mammals, including stranding by beaked whales, may be caused by acoustic energy levels below the Navy's bottom impact threshold of 173 dB. *See* Declaration of Dr. David E. Bain ¶¶ 6-11; Declaration of Dr. Edward C.M. Parsons ¶ 4; Declaration of Dr. Linda Weilgart ("Weilgart decl.") ¶ 9.

While NRDC has presented no evidence that marine mammals have actually been harmed by the Navy's use of MFA sonar in the Southern California Operating Area over the past forty years,[20] the record indicates that because harm to marine mammals is difficult to detect, except in cases of stranding, marine mammals may nonetheless be harmed by the Navy's use of MFA sonar in the Southern California Operating Area.

In the Navy's January 2007 "after action report" following the completion of the first three SOCAL exercises, the Navy acknowledged that "it is difficult to assess the potential exposure to sonar for species not observed." Indeed, the "after action reports" for the last eight COMPTUEX and JTFEX exercises in the Southern California Operating Area reveal that in less than 15% of the instances in which marine mammals were

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[20] The "after action reports" compiled by the Navy following completion of COMPTUEX and JTFEX exercises in the Southern California Operating Area do catalogue a number of marine mammal deaths. For example, the Navy's June 2007 "after action report" following the first three SOCAL exercises notes that during one of the exercises the Navy observed a floating, badly decomposed whale carcass, and that during two of the exercises it observed floating pinniped and dolphin carcasses. The report does not disclose whether necropsies were performed on the carcasses and it does not discuss whether the deaths might be related to the use of MFA sonar. Instead, the report proffers only the tentative explanation that "circumstantial evidence" of a link between "potential" algal toxin in California ocean waters and increased marine mammal mortality "is not unexpected" and "may" have "contributed" to the fact that pinniped and dolphin carcasses were observed. June 28, 2007 COMPTUEX/JTFEX Combined After Action Report at 13-14.

observed, MFA sonar was in fact being used.[21] Thus, the Navy's reports show that relatively few marine mammals have been observed while MFA sonar was being used.

Beaked whales are particularly difficult to observe. According to a 2004 Navy-sponsored report, "[t]heir very low broaching profile and the limited time they spend at the surface have conspired to make them resistant to easy surveying." The report notes that beaked whales are "very deep divers" and spend an estimated 80% of their time at considerable depths. According to the EA, Cuvier's and Mesoplodont beaked whales make dives of up to 87 minutes.[22] An international workshop on beaked whales organized by the U.S. Marine Mammal Commission noted that only 1 in 50 beaked whales would be detected in naval mitigation surveys using shipboard visual observation, even assuming ideal observation conditions.

Correspondingly, injuries to beaked whales are also difficult to observe. In a January 2007 memorandum, the NMFS concluded that "injuries or mortalities . . . would rarely be documented, due to the remote nature of many [naval activities] and the low probability that an injured or dead beaked whale would strand." While the parties have presented conflicting declarations on the issue whether whale carcasses resurface for some time after they initially sink, *compare* Weilgart decl. ¶ 7 *with* Ketten decl. ¶ 17, the likelihood that a whale carcass would be detected if it does not strand logically depends

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[21] The data in the "after action reports" for the eight COMPTUEX and JTFEX exercises in the Southern California Operating Area show that of 345 instances of marine mammal sighting, MFA sonar was being used only in 51 instances, or 14.8% of the time.

[22] The EA provides no information on the length of the dives of Baird's and Ziphiid beaked whales.

on how well the waters are searched for such carcasses. A 2007 study by NMFS researchers suggests that the likelihood of detecting dead beaked whales is low, as it concluded that, given current biological survey efforts, in 90% of beaked whale stocks a decline in population of 50% over a 15-year period would go undetected as a decline at all. Non-fatal injuries not leading to stranding would be even more difficult to detect because no beaked whale carcass would surface.

Moreover, it is not clear from the record whether in the past forty years the waters of southern California have been exposed to MFA sonar at the same power level and frequency and for the same duration as they are now. First, the Navy has provided no information about the frequency with which exercises involving the use of MFA sonar were conducted prior to 1992.

Second, while the Navy states that "Navy data going back to 1992 shows that the number of yearly exercises in the last 15 years and amount of [MFA sonar] use in SOCAL waters was greater in the past than it is now, showing a slight reduction trend," Bird decl. ¶ 18, that statement is too vague to allow conclusions to be drawn from it. The statement says nothing about the type of exercises or their duration over the years, and it does not make clear whether "in SOCAL waters" refers only to sonar use or also to the number of yearly exercises. Further, the statement does not specify whether "amount of [MFA sonar] use" refers to sonar use in each exercise or to total sonar use in a year, nor does it make clear whether that phrase refers to the number of times sonar was employed or to the aggregate duration of sonar transmission. The Navy produces no data in the record to clarify its statement.

Third, while the EA states that an average of seven JTFEX or COMPTUEX exercises are conducted each year, which is consistent with fourteen SOCAL exercises to be conducted over two years, the EA does not state the starting date after which that average has been maintained.

Fourth, while the Navy points out that its currently-used SQS-53 sonar system transmits sonar at the same power levels and frequencies as the SQS-26 system that the Navy used in earlier years, it acknowledges that in a new class of destroyers the SQS-53 system has replaced the SQS-56 system. Bird decl. ¶ 18. As the Biological Opinion of the NMFS makes clear, the SQS-56 system transmits MFA sonar at a lower power level and at different frequencies than the SQS-53 system.[23] Thus, the record suggests that with the new class of destroyers the average MFA sonar transmission may have increased in power level and changed in frequency. The Navy does not cite evidence to the contrary.

Finally, we can draw no conclusion from the statement in the EA that "output from active sonar systems used in [the Southern California Operating Area] and throughout the Navy has remained largely the same for the past 30 years." The EA does not explain whether "output" refers to frequency, sound intensity level, amount of time used during an exercise, or amount of

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[23] Moreover, the NMFS' Biological Opinion states that two low-frequency sonar systems are likely to be employed in the SOCAL exercises, but it does not state in what proportion they have been used in the past or will be used now. The fact that one of those systems has the same acoustic capabilities as, but improved processing capabilities over, the other system—a fact to which the Navy refers in its November 13, 2007 letter to the court—is irrelevant.

time used per year.[24] Even assuming the statement refers to the use of the sonar systems during an exercise or during the year, it is unclear whether it refers to total use in the Southern California Operating Area or rather to total use by the Navy in all its training areas combined.

In any event, the Navy's estimate that its use of MFA sonar in the SOCAL exercises will expose marine mammals to 564 instances of Level A harassment and nearly 170,000 instances of Level B harassment clearly indicates that at least some substantial harm will likely occur in the Southern California Operating Area.

C. The Mitigation Measures Employed by the Navy and Those Imposed by the District Court

While the Navy adopted a number of mitigation measures intended to reduce the harm caused by the use of MFA sonar in the SOCAL exercises, the district court concluded that those measures were inadequate both to cure the Navy's likely NEPA violation and to avoid the possibility of irreparable harm to NRDC.

Accordingly, following our November 13, 2007 remand order, the district court established additional, narrowly-tailored mitigation measures which the Navy would have to employ during the remaining SOCAL ex-

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[24] The same lack of clarity afflicts the statement in a Navy declaration that the Navy's training activities involving sonar during World War II "were similar in nature and intensity to those currently analyzed in the [EA for the SOCAL exercises]." Declaration of Conrad Erkelens ¶ 16. The statement does not make clear whether "intensity" refers generally to the frequency or size of the exercises or more specifically to the length of time during which sonar was used. Even if it refers to the latter, it appears to refer to the use of sonar per training activity, not per year.

ercises. To place these mitigation measures in context, we explain what mitigation measures the Navy has previously employed and is currently employing in the SOCAL exercises.

In June 2006, shortly before the Navy was to conduct that year's "Rim of the Pacific" exercise off the coast of Hawaii (the "2006 RIMPAC exercise"), plaintiffs sued the Navy and the same co-defendants here,[25] seeking to enjoin the Navy from using MFA sonar in that exercise. Following the district court's grant of NRDC's motion for a temporary restraining order, the parties entered into a settlement agreement that allowed the Navy to use MFA sonar in the 2006 RIMPAC exercise but only if it employed certain mitigation measures in addition to those already imposed by the NMFS in its June 27, 2006 Incidental Harassment Authorization and by the Department of Defense in its June 30, 2006 National Defense Exemption ("NDE I").[26]

The mitigation measures the Navy adopted for the 2006 RIMPAC exercise include operating MFA sonar at the lowest practicable level not to exceed 235 dB except

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[25] Only the League for Coastal Protection was not a plaintiff in the 2006 action.

[26] The NMFS's Incidental Harassment Authorization (IHA), issued pursuant to 16 U.S.C. § 1371(a)(5), authorized the incidental "taking" of a small number of marine mammals under the Marine Mammal Protection Act (MMPA), 16 U.S.C. § 1361 *et seq.* The Deputy Secretary of Defense incorporated the mitigation measures imposed by the NMFS into NDE I issued pursuant to 16 U.S.C. § 1371(f), which exempted from the MMPA for a period of six months all military readiness activities employing MFA sonar, including the 2006 RIMPAC exercise. The NDE I imposed different mitigation measures for non-RIMPAC exercises during the six month period, including the prohibition on use of MFA sonar within 12 nautical miles of a coast.

for short periods to meet tactical training objectives, and using at least one lookout dedicated to the detection of marine mammals, as well as three non-dedicated lookouts, on each ship operating MFA sonar and requiring them to report sightings of marine mammals.

The following mitigation measures employed during the 2006 RIMPAC exercise are of particular importance here:

- The designation of "safety zones" in which:
  - the MFA sonar level is reduced by 6 dB if a marine mammal is detected within 1,000 meters of the sonar dome (located in the bow of the vessel);[27]
  - the MFA sonar level is reduced by 10 dB if a marine mammal is detected within 500 meters of the sonar dome; and
  - the use of MFA sonar is stopped if a marine mammal is detected within 200 meters of the sonar dome.[28]
- In conditions of strong surface ducting—where sonar sound carries over a greater distance than would otherwise be the case—the safety zones will

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[27] Because the decibel is a logarithmic unit of acoustic power (using the base 10 logarithm), a reduction in sonar level of 6 dB corresponds to a reduction in sound intensity of approximately 75%, and a reduction in sonar level of 10 dB corresponds to a reduction in sound intensity of 90%. See Bird decl. ¶ 29.

[28] As one meter equals 1.094 yards, the sizes of the three safety zones correspond to approximately 1,100 yards, 550 yards, and 220 yards, respectively.

be expanded such that the MFA sonar level is reduced by 6 dB if a marine mammal is detected within 2,000 meters of the sonar dome and by 10 dB if one is detected within 1,000 meters of the dome, and that the use of MFA sonar is stopped if a marine mammal is detected within 500 meters of the sonar dome.

- In conditions of low visibility—*i.e.*, whenever a safety zone is not fully visible—additional detection measures will be used, such as infrared or enhanced passive acoustic detection. If detection of marine mammals is not possible out to the limits of the safety zone, the sonar level will be reduced as if a marine mammal is present immediately beyond the extent of detection.

- With the exception of three specific "choke point" exercises, MFA sonar will not be operated in constricted channels or canyon-like areas or within 25 kilometers of the 200 meter isobath.[29]

- During the three choke point exercises, additional mitigation measures will be employed, including two hours of pre-exercise monitoring for marine mammals.

Following the 2006 RIMPAC exercise, the Navy issued an "after action report" in which it reported that it had used MFA sonar for a total of 472 hours during the 2006 RIMPAC exercise and that the mitigation measures

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[29] An isobath is a line (either imaginary or on a map) joining places where water has equal depth.

resulted in a loss of 8 hours of MFA sonar use.[30] Dec. 7, 2006 Rim of the Pacific After Action Report at 9. Although no unusual behavior of marine mammals had been observed, the Navy reported that of the estimated 256 marine mammals potentially affected by the 472 hours of MFA sonar use, approximately 100 of them had been precluded from exposure to MFA sonar as a result of the mitigation measures.

In October 2006, in anticipation of the SOCAL exercises, the Navy submitted a consistency determination to the CCC, seeking the CCC's concurrence in the Navy's determination that the SOCAL exercises were consistent to the maximum extent possible with the enforceable policies of the CCMP, which, for purposes of the CZMA, are contained in the California Coastal Act. *See* Cal. Pub. Res. Code § 30008.[31] The CCC disagreed with the Navy that the use of MFA sonar in the SOCAL exercises would not affect California's coastal resources. Accordingly, the CCC conditioned its concurrence in the Navy's consistency determination on the Navy adopting fourteen mitigation measures, several of which the Navy had already employed in the 2006 RIMPAC exercise. The

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[30] The Navy asserted in its "after action report" that 8 hours of lost MFA sonar use translated into a somewhat greater amount of lost exercise time because once the sonar is turned off, simply turning it back on does not usually allow the Navy Commander to continue the exercise where it left off.

[31] The CZMA requires that a federal agency planning to conduct activities that may have reasonably foreseeable effects on California's coastal resources must apply to the CCC for a determination that those activities are consistent to the maximum extent practicable with the enforceable policies of the CCMP. *See* 16 U.S.C. § 1456(c)(1)(C); 15 C.F.R. § 930.36.

Navy agreed to adopt only four of the CCC's measures—all but one of which do not actually prevent the use of MFA sonar from harming marine mammals[32]—and it refused to adopt the remaining ten measures:

- The measures used in the 2006 RIMPAC exercise for reducing sonar levels during conditions of low visibility;
- The measures used in the 2006 RIMPAC exercise in "choke points;"
- Increasing the outer safety zone to 2 kilometers even in conditions not involving strong surface ducting;[33]

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[32] Following the CCC's conditional concurrence, the Navy agreed to adopt two of the CCC's mitigation measures: retrieving inert dropped mine shapes from the water and submitting to the CCC all monitoring results provided to the NMFS. The mitigation measures set forth in the EA, which have been standard operating procedure since 2004, appear to include two other measures proposed by the CCC: requiring passive sonar operators to monitor for marine mammals and report the detection of any such mammals; and providing a report to the NMFS following a major exercise that includes the results of marine mammal monitoring (a measure already employed in the 2006 RIMPAC exercise). The Navy concedes that the measure concerning dropped mine shapes "has nothing to do with MFA sonar usage," Dec. 20, 2007 Declaration of Rear Admiral John M. Bird ¶ 13, and the two reporting requirements do not mitigate actual harm to marine mammals but instead assist in the determination of the impacts of the SOCAL exercises. *See* Feb. 4, 2008 Dist. Ct. Order at 6 n.7. Only the use of passive sonar to monitor for marine mammals mitigates the harm caused by the use of MFA sonar.

[33] As stated above, the Navy had agreed to employ in the 2006 RIMPAC exercise a 2,000 meter safety zone in strong surface ducting conditions.

- Reducing sonar level by 6 dB during strong surface ducting conditions;
- Using two marine mammal observers who have received NOAA-approved training for surveillance during use of MFA sonar;
- Requiring aerial monitoring off San Clemente Island throughout exercises involving MFA sonar;
- Monitoring for marine mammals for 30 minutes prior to commencing use of MFA sonar;
- Avoiding training in areas with known high concentrations of marine mammals; and
- Locating and scheduling training outside the migration season for the grey whale.[34]

In January 2007, the Deputy Secretary of Defense issued, pursuant to 17 U.S.C. § 1371(f), a second National Defense Exemption ("NDE 11"), which exempted from the requirements of the MMPA all the Navy's military readiness activities employing MFA sonar for the duration of the SOCAL exercises. The Deputy Secretary of Defense conditioned the exemption on the Navy adopting a number of mitigation measures, which already had been standard operating procedure in the Navy's ASW exercises since 2004. As the EA makes clear, it is those mitigation measures, and only those measures, which the Navy adopted for the SOCAL exercises.

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[34] The nine bullet points reflect the substance of the ten mitigation measures the Navy refused to adopt; two of the conditions have been consolidated in the fifth bullet point.

While the Navy describes the adopted mitigation measures as consisting of 29 separate measures, the district court found that, in effect, they consist of only four basic measures: "(1) personnel training (providing approved Marine Species Awareness Training materials for lookouts and commanding officers), (2) on-deck lookouts, armed with binoculars or night vision goggles, to watch for marine mammals, (3) operating procedures to ensure that any sightings of marine mammals are communicated up the chain of command, so that MFA sonar is powered down [(*i.e.*, sonar power is reduced)] when a marine mammal approaches within 1,000 yards, 500 yards, and 'secured' (shut-down) at 200 yards,[35] and (4) coordination and reporting procedures." Feb. 4, 2008 Dist. Ct. Order at 6 n.7. Our review of the EA reveals at most two additional basic measures: that passive sonar will be used to detect marine mammals and that Navy aircraft participating in exercises will conduct surveillance when doing so does not interfere with safety or the "accomplishment of primary operational duties."[36] Notably, the mea-

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[35] We note that the Navy has recently agreed to slightly enlarge its safety zones by applying safety zones of 1,000, 500 and 200 *meters* instead of 1,000, 500 and 200 *yards*. Bird decl. ¶ 58. As a result, those safety zones are now of equal size as those employed in the 2006 RIMPAC exercise. However, the Navy has not agreed to employ expanded safety zones in strong surface ducting conditions.

[36] The Navy also adopted a mitigation measure requiring "increased vigilance" during major ASW exercises using MFA sonar when "critical conditions" are present: a rapid change in bathymetry in areas of a certain depth; where three or more vessels are operating MFA sonar in the same area for six hours or more; where MFA sonar may "cut off the exit route for marine mammals from a bay or channel; and the historical presence of a significant surface duct. However, in its June 2007 "after action report" the Navy explained that it had assessed the conditions of the Southern California Operating Area and concluded

sures adopted by the Navy do not include the ten aforementioned mitigation measures recommended by the CCC, such as increasing the outer safety zone to 2 kilometers, monitoring for marine mammals at least 30 minutes before commencing MFA sonar use, and conducting the SOCAL exercises outside the grey whale's migratory season and outside areas with high concentrations of marine mammals. Moreover, the adopted measures do not include the 2006 RIMPAC measures requiring that MFA sonar not be used in constricted channels and canyon-like areas or within 25 kilometers of the 200 meter isobath. Nor do they include the requirement, imposed by NDE I for non-RIMPAC exercises in 2006, that MFA sonar not be used within 12 nautical miles from the coastline.

Following our November 13, 2007 remand order, the district court set out to determine what narrowly-tailored mitigation measures should be imposed for the re-

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that "the requirements stated in [the aforementioned mitigation measure] do not apply to the physical conditions found in Southern California." Accordingly, this mitigation measure is not being employed in the SOCAL exercises and therefore does not, in fact, mitigate the impact of MFA sonar on marine mammals during those exercises.

Similarly, the Navy adopted as a mitigation measure the requirement that MFA sonar be operated "at the lowest practical level, not to exceed 235 dB, except as required to meet tactical training objectives." However, that requirement, also adopted for the 2006 RIMPAC exercise, has no apparent mitigating effect because (1) it is not clear whether the Navy ever assumed higher sonar levels when using its harassment model to predict harm to marine mammals, (2) the Navy's interim report on the Bahamas stranding indicates that sonar levels during the Bahamas exercise did not exceed 235 dB even without the mitigation measure, and (3) the exception that the Navy may exceed the 235 dB limit "as required to meet tactical training objectives" swallows the rule, as tactical training objectives are the only reason for using MFA sonar to begin with, thus allowing the Navy to exceed the 235 dB limit whenever it in fact uses MFA sonar.

maining SOCAL exercises. In the words of the district court, NRDC proposed "sweeping geographic exclusions" to the Navy's use of MFA sonar, including a 25 nautical mile coastal exclusion, locating exercises to the maximum extent possible in waters deeper than 1,500 meters, and an exclusion in the Catalina Basin, the Westfall seamount, and the Cortez and Tanner Banks. Jan. 3, 2008 Dist. Ct. Order at 13 n.6. The Navy also proposed several mitigation measures. *See id.*

After reviewing the parties' briefs and taking a Navy-guided tour of the *USS Milius*, the district court imposed six mitigation measures in addition to those already required by NDE II: (1) the Navy shall suspend use of MFA sonar when a marine mammal is detected within 2,200 yards from the sonar source, except where the marine mammal is a dolphin or a porpoise and it appears that the mammal is intentionally following the sonar-emitting naval vessel in order to play in or ride the vessel's bow wave; (2) the Navy shall reduce the MFA sonar level by 6 dB when significant surface ducting conditions are detected;[37] (3) the Navy shall not use MFA sonar within 12 nautical miles from the California coastline; (4) the Navy shall monitor, including by aircraft, for the presence of marine mammals for 60 minutes before employing MFA sonar, shall utilize two dedicated, NOAA —and NMF—trained lookouts at all times when MFA sonar is being used, shall employ passive acoustic monitoring to supplement visual detection of the presence of marine mammals, and shall use aircraft participating in

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[37] The parties clarified at oral argument on February 27, 2008, that "significant" is the same as "strong," the term used to modify surface ducting conditions in the mitigation measures for the 2006 RIMPAC exercise.

the training exercises to monitor for marine mammals for the duration of the exercises when MFA sonar is being used; (5) Navy helicopters shall monitor for marine mammals for 10 minutes before employing active dipping sonar; and (6) the Navy shall refrain from using MFA sonar in the Catalina Basin between the Santa Catalina and San Clemente Islands because ingress and egress to the basin are restricted and the basin has a high density of marine mammals. See Jan. 10, 2008 Dist. Ct. Order at 1-5.

The district court rejected many of the geographic exclusions proposed by NRDC in favor of a 2,200-yard safety zone, accepted the Navy's representations that the bathymetry off the shores of southern California presents unique training opportunities, *see* Feb. 4, 2008 Dist. Ct. Order at 7, and declined to limit the use of sonar at night or in conditions of low visibility despite the Navy's voluntarily adoption of such limitations for the 2006 RIMPAC exercise, *see* Jan. 3, 2008 Dist. Ct. Order at 7-8.

The Navy takes issue only with the first two of the mitigation measures imposed by the district court, namely the 2,200 yard "shutdown zone" and the "power-down" requirement during significant surface ducting conditions. Specifically, the Navy argues that those two mitigation measures tip the balance of hardships ir its favor and are contrary to the public interest.

In support of its argument the Navy has submitted declarations by high-ranking officers attesting to the adverse consequences that those measures will have on the Navy's military readiness. For example, Vice Admiral Locklear, Commander of the U.S. Third Fleet, opines that "imposing a 2200-yard shutdown zone will have crippling implications on Navy's ability to conduct realistic

pre-deployment ASW training employing MFA sonar" and will "jeopardize the training and readiness of U.S. THIRD Fleet [strike groups]." Declaration of Vice Admiral Samuel J. Locklear. ¶¶ 9, 13. Likewise, Rear Admiral Bird opines that "[t]raining in surface ducting conditions is critical to effective training." Bird decl. ¶ 52. In their classified declarations, Admiral Gary Roughead and Rear Admiral Ted N. Branch opine that both the 2200-yard shutdown zone and the power-down requirement in significant surface ducting conditions will create an unacceptable risk with respect to the Navy's ability to certify its strike groups as combat ready and will thus profoundly affect national security.

III. Standards of Review

Our review of a district court's grant of a preliminary injunction is "very deferential." *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 422 F.3d 782, 794 (9th Cir. 2005). We do not reverse the district court unless it "relie[s] on an erroneous legal premise or abuse[s] its discretion." *Sports Form, Inc. v. United Press Int'l, Inc.*, 686 F.2d 750, 752 (9th Cir. 1982) (internal citations omitted). A court abuses its discretion if it bases its decision on an erroneous legal standard or clearly erroneous findings of fact. *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147, 1156 (9th Cir. 2006) ("*Earth Island II*").

A district court may grant a preliminary injunction if one of two sets of criteria are met. "Under the 'traditional' criteria, a plaintiff must show (1) a strong likelihood of success on the merits, (2) the possibility of irreparable injury to plaintiff if preliminary relief is not granted, (3) a balance of hardships favoring the plaintiff, and (4) advancement of the public interest (in certain cases). Alternatively, a court may grant the injunction if

the plaintiff demonstrates either a combination of probable success on the merits and the possibility of irreparable injury or that serious questions are raised and the balance of hardships tips sharply in his favor." *Freecycle Network, Inc. v. Oey*, 505 F.3d 898, 902 (9th Cir. 2007); *see also Earth Island II*, 442 F.3d at 1158.

IV. Discussion

A. Likelihood of Success on the Merits

1. Effect of CEQ's Alternative Arrangements for NEPA Compliance

On January 15, 2008 CEQ purported to approve "alternative arrangements" for the Navy to continue its use of MFA sonar while complying with NEPA, reasoning that "emergency circumstances" prevented normal compliance. CEQ's authority to grant such relief derives from 40 C.F.R. § 1506.11, which provides in full:

> Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these regulations, the Federal agency taking the action should consult with the Council about alternative arrangements. Agencies and the Council will limit such arrangements to actions necessary to control the immediate impacts of the emergency. Other actions remain subject to NEPA review.

40 C.F.R. § 1506.11. CEQ's letter of explanation to the Navy stated that the district court's modified injunction "imposes training restrictions . . . that continue to create a significant and unreasonable risk that Strike Groups will not be able to train and be certified as fully mission capable." CEQ Letter to Donald C. Winter at 3. CEQ also stated that "the inability to train effectively

with MFA sonar puts the lives of thousands of Americans directly at risk. . . . Therefore, there are urgent national security reasons for providing alternative arrangements under the CEQ regulations." *Id.* at 3-4.

The Navy then petitioned this court to vacate the district court's preliminary injunction, arguing that CEQ's approval of "alternative arrangements" deprived NRDC of the "likelihood of success on the merits" of its NEPA claims, thus eliminating the legal basis for the injunction. We remanded to the district court to allow it to consider in the first instance whether this legal development merited vacatur or a partial stay of the injunction.

On remand, the Navy maintained that the CEQ's "emergency circumstances" determination relieved it of the requirement to prepare an EIS prior to commencing the remaining SOCAL exercises. NRDC argued that CEQ's action was beyond the scope of the regulation and otherwise invalid, and that the preliminary injunction should remain in place. The district court considered these arguments and concluded that its preliminary injunction was "not affected by [CEQ's] approval of emergency alternative arrangements because there is no emergency." Feb. 4, 2008 Dist. Ct. Order at 2. Accordingly, it held that "CEQ's action is beyond the scope of the regulation and is invalid[]" and that "[t]he Navy is not, therefore exempted from compliance" with NEPA and the preliminary injunction. *Id.* The district court found that CEQ's interpretation of "emergency circumstances" to include a court order entered in the course of pending litigation was not authorized by 40 C.F.R. §1506.11, because it was contrary to both the plain meaning of "emergency circumstances" and the drafters' origi-

nal intent. It also found that CEQ's action was contrary to the governing statute, NEPA.[38]

The Navy makes two basic arguments as to why the district court erred by failing to vacate the preliminary injunction in light of CEQ's approval of "alternative arrangements." First, the Navy argues that the district court lacked subject matter jurisdiction to review CEQ's approval of alternative arrangements because such approval constitutes a superseding agency action that removes as moot any basis for an injunction predicated on plaintiffs' original claims concerning the Navy's EA. Second, the Navy argues that, even if the district court could review CEQ's action, the court erred by not deferring to CEQ's and the Navy's assessment that "emergency circumstances" exist within the meaning of 40 C.F.R. § 1506.11. We address the Navy's arguments in turn.

a. Subject Matter Jurisdiction over NRDC's Challenge to CEQ's Action

The Navy argues that the district court lacked subject matter jurisdiction to consider the validity of CEQ's action because that action allegedly moots the plaintiffs' original claims. Specifically, the Navy contends that the adoption of CEQ's "alternative arrangements" in a su-

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[38] The district court also noted that CEQ had essentially crafted its own, alternative injunction, which suggested that CEQ, as an executive body, was effectively "sitting in review of a decision of the judicial branch." The district court observed that CEQ's actions raised "serious constitutional concerns under the Separation of Powers doctrine," but it declined, pursuant to the doctrine of constitutional avoidance, to make a finding as to the constitutionality of its action. *See* Feb. 4, 2008 Dist. Ct. Order at 24.

perseding Decision Memorandum constitutes a new administrative action, which can only be challenged by a new claim on the merits. *See Rattlesnake Coalition v. EPA*, 509 F.3d 1095, 1103-04 (holding that the district court lacked subject matter jurisdiction over new final agency action).[39] The district court implicitly rejected this argument by continuing to exercise jurisdiction over the plaintiffs' NEPA claim. Its decision to do so is firmly grounded in the familiar principle that only a *valid* subsequent action can render a legal claim moot. *See Adarand Constructors, Inc. v. Slater*, 528 U.S. 216, 222-23 (2000); *United States v. Larson*, 302 F.3d 1016, 1020 (9th Cir. 2002) ("The stipulation moots [plaintiff's] challenge to the suppression ruling only if it is valid."). Accordingly, the district court did not rely on an erroneous legal premise or abuse its discretion in concluding that it had jurisdiction to assess the validity of the new action in order to determine whether plaintiffs' original claims could survive. *See Adarand*, 528 U.S. at 222-23.

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[39] Notably, none of the cases that the Navy cites in support of this argument involve a plaintiff's challenge to the validity of a new agency action. For example, in *Forest Guardians v. U.S. Forest Serv.*, 329 F.3d 1089, 1096 (9th Cir. 2003), plaintiffs' claims were rendered moot because the superseding and controlling environmental documentation that displaced the earlier agency action did not rely on the challenged assumptions that formed the basis of plaintiffs' claims. In *W. Radio Serv. Co. Inc. v. Glickman*, 113 F.3d 966, 974 (9th Cir. 1997), a challenge to a letter postponing the issuance of certain permits until a fee structure was established was rendered moot by the subsequent issuance of a fee structure. In *Aluminum Co. of Am. v. Bonneville Power Admin.*, 56 F.3d 1075 (9th Cir. 1995), challenges to a 1993 Rule of Decision were moot because augmentations were being issued under a subsequent Rule of Decision. Finally, in *Oregon Natural Res. Council v. Harrell*, 52 F.3d 1499, 1501-02, 1508 (9th Cir. 1995), the district court ordered a challenged ROD withdrawn because it was incomplete, and a subsequent challenge to that non-operative ROD was thus held to be moot.

Nor did the district court abuse its discretion by leaving in place the preliminary injunction after determining that CEQ's action did not require its vacatur. The Navy's contention that the district court issued "an entirely new injunction . . . based on new, ancillary claims" mischaracterizes the posture of this case. The Navy challenged the injunction based on CEQ's action; NRDC argued only that CEQ's action did not change the merits of its NEPA claims. Thus, the district court here did not "[g]rant[] a preliminary injunction based on a showing that the plaintiffs were likely to succeed in establishing a violation of an ancillary court order, rather than a showing that they were likely to succeed on the merits of any of their claims." *Alabama v. U.S. Army Corps of Engineers*, 424 F.3d 1117, 1135 (11th Cir. 2005).

b. The District Court's Assessment of Whether "Emergency Circumstances" Existed

(1) Deference

The district court concluded that CEQ's interpretation of 40 C.F.R. § 1506.11 is not entitled to deference. It reasoned that under the Administrative Procedure Act ("APA"), 5 U.S.C. § 551 *et seq.*, the courts traditionally afford deference to (1) an agency's reasonable interpretation of a statute it administers "if the statute is silent or ambiguous with respect to the specific issue. . .," citing *Chevron, U.S.A., Inc. v. NRDC*, 467 U.S. 837, 843 (1984), and (2) an agency's interpretation of its own regulations unless "an alternative reading is compelled by the regulation's plain language or by other indications of the [agency's] intent at the time of the regulation's promulgation," citing *Thomas Jefferson Univ. v. Shalala*, 512 U.S. 504, 512 (1994), and *Bowles v. Seminole Rock & Sand*

Co., 325 U.S. 410, 414 (1945). *See* Feb. 4, 2008 Dist. Ct. Order at 13-14.

NRDC challenged neither the propriety of CEQ's original promulgation of 40 C.F.R. § 1506.11 nor the fact that § 1506.11 allows alternative arrangements for compliance with NEPA under genuine emergency circumstances. Instead, NRDC limited its challenge to CEQ's application of the regulation to the facts of this case. Accordingly, the district court considered whether the term "emergency circumstances" could be afforded so broad an interpretation as to encompass the Navy's need to continue its long-planned, routine sonar training exercises without the mitigation measures imposed by the district court. The district court concluded that the plain language of the regulation and the limited indicia of the agency's original intent compelled a narrower interpretation of "emergency circumstances" than the one afforded it by CEQ. Accordingly, the district court concluded that it did not owe deference to CEQ's interpretation of § 1506.11 under *Thomas Jefferson* and *Seminole Rock*. We review that conclusion to determine whether in so doing it relied on an erroneous legal premise or abused its discretion; we conclude that it did neither.

The district court followed established Supreme Court precedent in finding that an agency's interpretation of its own regulation is not entitled to deference when it is inconsistent with the regulation itself, conflicts with agency intent at the time of promulgation, and reaches beyond "the limits imposed by the statute," NEPA. *See Auer v. Robbins*, 519 U.S. 452, 461-63 (1997). Next, the district court, after concluding that the meaning of "emergency circumstances" was clear, applied the appropriate legal principles that an agency's interpreta-

tion of its own regulation is entitled to deference "only when the language of the regulation is ambiguous." *See Christensen v. Harris County*, 529 U.S. 576, 588 (2000). Accordingly, the district court did not abuse its discretion when it determined not to give deference to CEQ's overly broad interpretation of "emergency circumstances."[40]

(2) Plain Meaning and Intent of CEQ Regulation

In finding that no emergency circumstances existed, the district court reasoned that the "Navy's current 'emergency' is simply a creature of its own making, *i.e.*, its failure to prepare adequate environmental documentation in a timely fashion, via the traditional EIS process or otherwise." Feb. 4, 2008 Dist. Ct. Order at 17. In short, it was not a sudden unanticipated event. The district court supported its conclusion by noting that the CEQ letter does not specify an "emergency" other than the district court's mitigation order itself, which, in CEQ's view, creates a "significant and unreasonable risk" that strike groups will not be able to train and be certified as fully mission capable. *Id.* at 16-17.

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[40] The district court also held that *Skidmore* deference is inapplicable because this case involves an agency's interpretation of a regulation, not its informal interpretation of a statute it administers. *See* Feb. 4, 2008 Dist. Ct. Order at 19 n.13 (rejecting plaintiffs' argument that because it does not arise out of formal rulemaking, CEQ's interpretation is entitled to little or no deference under *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944)). While this holding is correct as a matter of law, our determination that the district court neither abused its discretion nor relied on an erroneous legal premise in concluding that no deference is owed CEQ's overly broad interpretation of "emergency circumstances" renders this issue moot.

On appeal, the Navy argues that "no matter its genesis[,] . . . the inability to certify its west coast-based strike groups for deployment to hostile areas overseas during a time of war" is a pressing national emergency. The Navy cites to declarations, including one of the Chief of Naval Operations, that attests to the national security impacts of such a failure at a time when the United States is currently engaged in war in two countries. The Navy contends that the district court's view that the term "emergency circumstances" as used in the regulation *per se* excludes the circumstances presented here is an impermissible substitution of its judgment for that of multiple federal agencies (citing *Ass'n of Pac. Fisheries v. EPA*, 615 F.2d 794, 810-11 (9th Cir. 1980)). We reject this argument and hold, for the reasons explained above, that the district court did not abuse its discretion in determining that the plain meaning of "emergency circumstances" precludes an interpretation so broad as to encompass the Navy's need to continue long-planned, routine training exercises without mitigation measures ordered by the court.

There is ample support for the manner in which the district court exercised its discretion. The district court properly relied on dictionary definitions of "emergency" and "emergency circumstances" to support its conclusion that CEQ's interpretation is not entitled to deference. *See Watson v. United* States, 128 S. Ct. 579, 583 (2007) (noting that terms are construed consistently with their everyday meaning, including by reference to the dictionary absent statutory definition or definitive clue). As the district court observed, the Oxford English Online Dictionary defines "emergency" as "[t]he arising, sudden or unexpected occurrence (of a state of things, an event, etc.)." Oxford English Online Dictionary, *available at*

http://dictionary.oed.com. Black's Law Dictionary defines the term "emergency circumstances," through a cross-reference to "exigent circumstances," as "[a] situation that demands unusual or immediate action and that may allow people to circumvent usual procedures, *as when a neighbor breaks through a window of a burning house to save someone inside.*" Blacks Law Dictionary 260, 562 (8th ed. 2004) (emphasis added). The district court did not abuse its discretion in concluding that the circumstances in the present case fall outside the scope of these definitions because its preliminary injunction was entirely predictable given the parties' litigation history. Feb. 4, 2008 Dist. Ct. Order at 15.[41]

The Navy urges that the risk to national security created by the preliminary injunction falls squarely within the legal definition of "emergency circumstances." However, the Navy has been on notice of its possible legal obligations to prepare an EIS for the SOCAL exercises from the moment it first planned those exercises. In addition, NRDC filed its complaint almost a year ago, and on August 7, 2007, the district court held that the Navy was likely to lose on the merits of NRDC's claims. We affirmed that ruling in November of 2007. Still, the Navy

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[41] NRDC provides several more dictionary definitions of "emergency," all of which include the terms "unexpected" or "unforseen." The Navy refers us to another source that defines "emergency" as "a situation demanding immediate attention." Random House Dict. of the English Lang. 636 (2d ed. 1987). We do not adjudicate the meaning of the word "emergency" here. Rather, we need conclude only that the district court did not rely on erroneous legal principles or abuse its discretion in reaching its determination as to that term's plain meaning. Because we are not "left with the definite and firm conviction that a mistake has been committed[,]" we leave the district court's determination intact. *Sports Form, Inc.*, 686 F.2d at 752.

waited until January 10, 2008, to raise a cry of "emergency" and request the NEPA and CZMA waivers it relies on here, in order to continue its routine, planned training exercises. We find no abuse of discretion in the district court's determination that such a series of events gives rise to a predictable outcome, not an unforeseeable one demanding "unusual or immediate action."

Moreover, the district court's conclusion finds support in CEQ's recent response to Hurricane Katrina. In March 2006, CEQ approved alternative arrangements to allow the Federal Emergency Management Agency to respond on an emergency basis to "[d]amages to the critical physical infrastructure in the New Orleans Metropolitan Area from the impact of Hurricanes Katrina and Rita [that] rendered parts of the city inoperable and uninhabitable." NEPA Alternative Arrangements for Critical Physical Infrastructure in New Orleans, 71 Fed. Reg. 14712, 14713 (March 23, 2006). The alternative arrangements explain that generally, such arrangements are made when "emergency circumstances require taking actions with significant environmental impacts and *there is not sufficient time to follow the regular [EIS] process.*" *Id.* (emphasis added). This language supports the district court's view that the words "emergency circumstances" in 40 C.F.R. § 1506.11 refer to unexpected, suddenly arising situations that require agency action in a shorter time frame than would be required to prepare an EIS. By contrast, the Navy's routine SOCAL exercises were planned well in advance and with "sufficient time to follow the regular [EIS] process."

In concluding that the Navy's failure to comply timely with NEPA does not constitute an "emergency circumstance" within the meaning of 40 C.F.R. § 1506.11, the

district court also relied on the limited drafting history of the regulation. As the district court pointed out, the initial proposed version of the regulation required an agency "*proposing to take*" an emergency action to consult with CEQ regarding alternative arrangements.[42] *See* Proposed Implementation of Procedural Provisions, 43 Fed. Reg. 25230, 25243 (June 9, 1978) (emphasis added). However, the drafters changed "proposing to take" to "taking" in order to remove the inference that consultation must necessarily precede agency action because "such a requirement might be impractical in emergency circumstances and could defeat the purpose of the section." Implementation of Procedural Provisions; Final Regulations, 43 Fed. Reg. 55978, 55988 (Nov. 29, 1978). While the Navy dismisses this drafting history as reflecting only that "the proposed regulation was broadened to allow actions to be taken prior to consultation with CEQ," we find no abuse of discretion in the district court's contrary conclusion that the regulatory history "supports a narrow, rather than a broad interpretation of the phrase 'emergency circumstances'" and that the regulatory history reflects CEQ's intent to use the regulation to accommodate "sudden unanticipated events" but not more predictable events such as provisionally unfavorable litigation results. Feb. 4, 2008 Dist. Ct. Order at 19.

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[42] In its analysis of the agency's intent, the district court appropriately declined to consider the declaration of Nicholas C. Yost, CEQ general counsel at the time the regulation was drafted, as "an unreliable guide" to CEQ's intent, comparing the declaration to "subsequent legislative history." Feb. 4, 2008 Dist. Ct. Order at 18-19 (quoting *Chapman v. United States*, 500 U.S. 453, 464 n.4 (1991) (internal citations omitted)).

Accordingly, we conclude that the district court did not rely on an erroneous legal premise or abuse its discretion in finding that the Navy's attempt to characterize a federal court injunction as an "emergency circumstance" is contrary to the plain meaning of the language and to the intended purpose of CEQ's emergency circumstances regulation.[43]

(3) Prior Decisions

Prior judicial decisions also support our conclusion that the district court did not rely on erroneous legal premises or abuse its discretion in concluding that CEQ's action is invalid. In each of the cases sustaining an application of 40 C.F.R. § 1506.11, CEQ allowed "alternative arrangements" in response to unanticipated emergencies that required federal agencies to respond quickly to new and changing events.

For example, in *Valley Citizens for a Safe Environment v. Vest*, the court upheld "alternative arrangements" which permitted the Air Force to fly C-5A transport planes into and out of Westover Air Force Base on a twenty-four hour schedule, despite a previously prepared EIS's prohibition of such flights. 1991 WL 330963 (D. Mass. May 30, 1991). The court in *Valley Citizens*

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[43] NRDC makes the additional argument that CEQ's order goes beyond the scope of the regulation because the "alternative arrangements," prescribed prospectively through January 2009, go beyond those "actions necessary to control the immediate impacts of the emergency," even if there were an emergency. Because we hold that there is no basis for reversing the district court's determination that there were no "emergency circumstances" under 40 C.F.R. § 1506.11, and therefore no basis for CEQ's order, we do not reach the merits of this argument.

denied the plaintiffs' request for an injunction until a supplemental EIS was completed because it concluded that the modified flight schedule was essential to supply military equipment and personnel for Operation Desert Storm, an emergency response to Iraq's sudden invasion of Kuwait that same month. *Id.* at *5-6. The court agreed with the determination of CEQ and the Air Force that Iraq's invasion of Kuwait reasonably constituted an emergency "given the military's operational and scheduling difficulties and the hostile and unpredictable nature of the Persian Gulf region." *Id.* at *5.

Other cases sustaining CEQ's application of 40 C.F.R. § 1506.11 also support the district court's narrow interpretation of the phrase "emergency circumstances." Courts have routinely given deference to CEQ's finding of "emergency circumstances" in situations where that finding has been used to "avert imminent crises outside the agency's control." *Id.* at 17; *see, e.g., Nat'l Audobon Society v. Hester*, 801 F.2d 405, 405-7 (D.C. Cir. 1986) (giving deference where immediate action was necessary to prevent the extinction of the California condor); *Miccousukee Tribe of Indians of Fla. v. United States*, 509 F. Supp. 2d 1288, 129091 (S.D. Fla. 2007) (giving deference where immediate deviation from a water delivery method was necessary to avoid pending extinction of the Cape Sable seaside sparrow in the Everglades); *NRDC v. Pena*, 20 F. Supp. 2d 45, 50 (D.D.C. 1998) (giving deference where immediate action was necessary to secure storage of nuclear materials); *Crosby v. Young*, 512 F. Supp. 1363, 1380, 1386 (E.D. Mich. 1981) (where an immediate response was required for a city to meet a federal funding deadline for a development project to counteract potentially dire economic effects of the closure of a General Motors plant). In looking to prior decisions,

the district court certainly did not apply an erroneous legal principle. Rather, it found legal authority that supported its view.

(4) CEQ's Broad Reading of "Emergency Circumstances" and NEPA

The district court also held that CEQ's broad reading of "emergency circumstances" here is *ultra vires* because it subverts NEPA's directive that agencies perform their NEPA duties "to the fullest extent possible."[44] *See* 42 U.S.C. § 4332. The existence of specific Congressional exemptions to NEPA informed the district court's decision not to read the regulation "so broadly as to independently authorize CEQ to do the same, in the absence of a legitimate 'emergency.'" Feb. 4, 2008 Dist. Ct. Order at 21. Moreover, the court noted that many of the exemptions granted in other cases involved agencies faced with conflicting Congressional mandates. *Id.* at 22.

NEPA, the statute authorizing 40 C.F.R. § 1506.11, requires federal agencies to prepare an EIS for a major federal action "significantly affecting the quality of the human environment," 42 U.S.C. § 4332(2)(C), or, in the alternative, to implement mitigation measures to minimize impacts to the point where an EIS in [*sic*] not required. *See, e.g., Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001). Although CEQ justified its approval of "alternative arrangements" to satisfy NEPA as grounded in "urgent national security" concerns, *see* Jan. 15, 2008 CEQ Letter at 4, the district court noted that, in the absence of a *bona fide* emer-

[44] Moreover, NEPA also requires agencies to use "all practicable means and measures" to fulfill their duties under it. 42 U.S.C. § 4331(b).

gency, the "alternative arrangements" "operate[] to exempt [the Navy] from the ususal rigors involved in the preparation of an EIS, which forms the 'heart' of NEPA." Feb. 4, 2008 Dist. Ct. Order at 21 n.14 (quoting *Envtl. Def. Fund, Inc. v. Andrus*, 619 F.2d 1368, 1374-5 (10th Cir. 1980)).

Reviewing CEQ's justification in this light, the district court concluded that CEQ's broad reading of "emergency circumstances" has the effect of reading a "national security" or "defense" exemption into NEPA, where none exists.[45] As the district court pointed out,

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[45] Moreover, the district court's conclusion was grounded in the well-established fact that there is no "national defense" exception to NEPA. *See San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm'n*, 449 F.3d 1016, 1035 (9th Cir. 2006); *No GWEN Alliance of Lane County, Inc. v. Aldridge*, 855 F.2d 1380, 1384 (9th Cir. 1988). "'The Navy, just like any federal agency, must carry out its NEPA mandate to the fullest extent possible and this mandate includes weighing the environmental costs of the [project] even though the project has serious security implications.'" *San Luis Obispo*, 449 F.3d at 1035 (quoting No GWEN, 855 F.2d at 1384).

Indeed, Congress has included exemptions for "paramount" national security concerns in many environmental statutes, but not in NEPA. *See, e.g.*, Toxic Substances Control Act, 15 U.S.C. § 2621 (compliance waived if the President determines a requested waiver to be necessary "in the interest of national defense"); Coastal Zone Management Act, 16 U.S.C. § 1456(c)(1)(b) (under certain circumstances the President may exempt an activity that is in the "paramount interest of the United States"); Endangered Species Act, 16 U.S.C. § 1536(j) (exemption granted if the Secretary of Defense finds such exemption necessary "for reasons of national security"); Clean Water Act, 33 U.S.C. § 1323(a) (the President may exempt federal effluent source for up to one year if in the "paramount interest of the United States"); Safe Drinking Water Act, 42 U.S.C. § 300j-6(a) (the President may exempt federal facility for up to one year if in the "paramount interest of the United States"); Resource Conservation and Recovery Act, 42 U.S.C. § 6961(a) (the President may exempt federal solid waste management facility for up

Congress knows well how to exempt planned Defense Department activities from the requirements of NEPA. *See, e.g.*, Nat'l Defense Auth. Act, Pub. L. No. 106-398, § 317, 114 Stat. 1654, 1654A-57 (2000) (specifically exempting Defense Department from preparing nationwide EIS for low-level flight training). The fact that Congress has not so exempted the Navy's exercises in the Southern California Operating Area further supports the district court's conclusion that 40 C.F.R. § 1506.11 should not be read to exempt the routine SOCAL exercises from NEPA's requirements.

The district court's interpretation also comports with well-established Supreme Court precedent that narrowly interprets NEPA's requirement that agencies comply with its provisions "to the fullest extent possible." The Supreme Court has made clear that the "to the fullest extent possible" language was intended to address only cases in which there is an "irreconcilable and fundamental conflict" between NEPA's requirements and the requirements of another statute. *See Flint Ridge Dev. Co. v. Scenic Rivers Ass'n. of OK*, 426 U.S. 776, 787-88 (1976). Here, as the district court noted, the Navy has never contended that it could not reconcile the district court's injunction with the requirements of NEPA.

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to one year if in the "paramount interest of the United States"); Clean Air Act, 42 U.S.C. § 7417(b) (the President may exempt federal emission source for up to one year if in the "paramount interest of the United States"); Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. § 9620(j) (the President may issue orders to exempt facilities of the Department of Energy and the Department of Defense "as may be necessary to protect the national security interests of the United States . . ."). *See* Oct. 1, 2007 Brief of Amicus Curiae Law Professors Hope Babcock, et al. at 16 & n.4.

Similarly, NEPA regulations interpret the language "to the fullest extent possible" to mean that "each agency of the Federal Government shall comply with that section unless existing law . . . expressly prohibits or makes compliance impossible." 40 C.F.R. § 1500.6. The legislative history of § 1500.6 explains that this language "shall not be used by any Federal agency as a means of avoiding compliance with [NEPA's] directives . . . ." 115 Cong. Rec. (Part 29) 39702-39703 (1969); *see also Calvert Cliffs' Coordinating Comm. Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1114 (D.C. Cir. 1971) ("We must stress as forcefully as possible that this language does not provide an escape hatch for footdragging agencies; it does not make NEPA's procedural requirements somehow 'discretionary.' . . . Indeed, [the language] sets a high standard for the agencies, a standard which must be rigorously enforced by the reviewing courts.").

The Navy asserts that national policy requires that it must be confident that its west coast-based strike groups are prepared and certified for deployment to hostile areas overseas during a time of war. However, as the district court noted, nothing prevented the Navy from preparing an EIS prior to commencing the SOCAL exercises; indeed, the fact that the Navy is currently developing an EIS for exercises in the Southern California Operating Area confirms that it is fully capable of meeting NEPA's requirements. *See* Notice of Intent To Prepare an Environmental Impact Statement/Overseas Environmental Impact Statement for the Southern California Range Complex, 71 Fed. Reg. 76,639 (Dec. 21, 2006).

Although the Navy argues that "NEPA must give way" so that it may proceed with its training and certification unhindered by environmental rules, quoting *Flint*

Ridge, 426 U.S. at 788, *Flint Ridge* itself holds that NEPA's procedural requirements are not discretionary and do not give way unless a "clear and unavoidable conflict in statutory authority exists," *id.*, here, the district court carefully examined the record, with which it has longstanding familiarity, and determined that there was no such conflict in statutory authority, concluding that conditioning phrases like "consistent with other essential considerations of national policy," 42 U.S.C. §4331(b), and "to the fullest extent possible," *id.* § 4332, do not indicate Congressional intent to create a statutory escape hatch. Nor does any intent appear in the implementing regulations, that would allow the Navy to conduct its exercises before completing an EIS.[46] Feb. 4, 2008 Dist. Ct. Order at 22-23.

In reaching these conclusions, the district court examined the various legal rules and applied those that were relevant to this proceeding. Having done so, it acted well within its discretion in determining that CEQ's broad interpretation of "emergency circumstances" is contrary to the dictates of NEPA.

(5) Additional Considerations

We also note that NRDC has raised a serious question as to whether CEQ acted arbitrarily and capriciously in the procedure it used to reach its "emergency circumstances" determination pursuant to 40 C.F.R. § 1506.11.

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[46] The Navy argues, in the alternative, that CEQ's action comports with NEPA because it actually gives effect to the district court's conclusion that an EIS is likely required and provides "alternative arrangements" as a bridge until the agency completes this EIS. Because we have concluded that the district court did not abuse its discretion in determining that no emergency existed and that CEQ had no authority to issue its order, we need not reach this argument.

The Navy, arguing that the district court's order created an emergency by compromising its ability to effectively train and certify its strike groups, requested alternative arrangements on January 10, 2008, and submitted evidence supporting that request the following day. Jan. 15, 2008 CEQ Letter at 1. CEQ approved the Navy's request four days later, on January 15, 2008. *Id.* In the intervening time, CEQ held discussions with, and received briefings from, the Navy and NMFS and reviewed the Navy's supporting documents. *Id.* at 4. At no point did CEQ request, nor did the Navy provide it, any of the evidence in the district court record contrary to the Navy's position that the challenged mitigation measures would compromise its ability to train and certify its strike groups. Thus, CEQ reached its "emergency circumstances" determination without considering any of the substantial evidence on which the district court relied in concluding that the mitigation measures it imposed would *not* render the Navy unable to train and certify its strike groups. Where, as here, the basis for an emergency is alleged to be the effect of a district court order, entered after careful review of a full record submitted by both parties, a substantial question exists as to whether CEQ acted arbitrarily and capriciously when it failed to review the full record, and instead considered only one side's views, and on that basis determined that the court's order gave rise to "emergency circumstances."[47]

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[47] CEQ's action raises a serious question not only under the APA, but also under the Constitution. The separation of powers doctrine prevents Congress from vesting review of the decisions of Article III courts in the Executive Branch. *See Plaut v. Spendthrift Farm, Inc.*, 514 U.S. 211, 218-19 (1995) (explaining that Article III "gives the Federal Judiciary the power, not merely to rule on cases, but to *decide* them, subject to review only by superior courts in the Article III

(6) Conclusion

For the foregoing reasons, we hold that the district court did not abuse its discretion or rely on an erroneous legal premise in determining that CEQ's broad interpretation of "emergency circumstances" was not authorized by 40 C.F.R. §1506.11 because it was contrary to the plain meaning of the regulation and contrary to NEPA and, accordingly, that the Navy remains subject to the traditional requirements of NEPA.

2. NRDC's NEPA Claim

We next address the district court's conclusion that NRDC has shown probable success on the merits of its claim that the Navy violated NEPA by failing to prepare an EIS for the SOCAL exercises.

In our November 13, 2007 order we concluded that "Plaintiffs have shown a strong likelihood of success on

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hierarchy"); *see also Hayburn's Case*, 2 U.S. (2 Dall.) 409, 410 (1792). Here, the Navy represented, and CEQ determined, that "emergency circumstances" existed because the district court's preliminary injunction prevented the Navy from effectively training and certifying its strike groups for deployment. In making this determination, CEQ presumably reviewed the same evidence that the Navy presented to the district court (without, as noted above, the benefit of NRDC's evidence) and concluded, *despite the district court's explicit factual finding to the contrary*, that the imposed mitigation measures would compromise the Navy's ability to train and certify its forces. We find substantial merit in NRDC's argument that even if the district court's factual findings with respect to the effect of its mitigation measures were erroneous, it was the job of the appellate court—and not the Executive Branch—to so conclude. However, because the district court declined to reach this question, we, too, do not consider the constitutional argument in determining that the district court did not rely on an erroneous legal premise or abuse its discretion when it held that CEQ's action was invalid.

the merits of their claims under [NEPA]." *NRDC*, 508 F.3d at 886. While that conclusion was based on our review of the record underlying the district court's August 7, 2007 preliminary injunction order, the only subsequent developments are CEQ's approval of "alternative arrangements" pursuant to 40 C.F.R. § 1506.11 and the Navy's concession, by virtue of seeking such approval, that the SOCAL exercises will have a "significant environmental impact." *See* 40 C.F.R. § 1506.11 ("Where emergency circumstances make it necessary to take an action *with significant environmental impact* without observing the provisions of these regulations, the Federal agency taking the action should consult with the Council about alternative arrangements.") (emphasis added). Although we elaborate on our reasons, our original conclusion remains unchanged.

a. Statutory Background

As discussed earlier, NEPA requires a federal agency such as the Navy to prepare a detailed EIS for all "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). However, if, as here, an agency's regulations do not categorically require the preparation of an EIS, then the agency must first prepare an EA to determine whether the action will have a significant effect on the environment. *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 730 (9th Cir. 2001); *see* 40 C.F.R. § 1501.4. If the action will significantly affect the environment, an EIS must be prepared, while if the project will have only an insignificant effect, the agency issues a Finding of No Significant Impact (FONSI). *Ocean Advocates v. U.S. Army Corps of Eng'rs*, 402 F.3d 846, 864 (9th Cir. 2005); *see* 40 C.F.R. §§ 1501.3, 1501.4.

"An EIS must be prepared 'if substantial questions are raised as to whether a project . . . may cause significant degradation of some human environmental factor.'" *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998) (quoting *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1149 (9th Cir. 1998)). Thus, a plaintiff need not show that significant effects on the environment will in fact occur; raising "substantial questions whether a project may have a significant effect" on the environment is enough. *Id.*; *Idaho Sporting*, 137 F.3d at 1150.

NEPA's procedural requirements mandate that an agency take a "hard look" at the environmental consequences of its actions. *Earth Island II*, 442 F.3d at 1159. NEPA is unique in that it does not direct or require any particular substantive action on the part of an agency. Its sole purpose is to require that the agency be fully informed as to the environmental consequences of its actions, the mitigation measures available, and the alternatives to its proposed action. Once fully informed, the agency may make its own final rule or decision. However, an agency may not avoid preparing an EIS by making conclusory assertions that an activity will have only an insignificant impact on the environment. *Ocean Advocates*, 402 F.3d at 864. If an agency opts not to prepare an EIS, it must put forth a "convincing statement of reasons" to explain why a project's impacts are insignificant. *Blue Mountains*, 161 F.3d at 1212 (quoting *Save the Yaak Comm. v. Block*, 840 F.2d 714, 717 (9th Cir. 1988)).

NEPA challenges are reviewed under the APA, which provides that an agency action may be set aside if it is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law[.]" 5 U.S.C. § 706(2)(A).

The agency's decisions are "entitled to a presumption of regularity. But that presumption is not to shield [the agency's] action from a thorough, probing, in-depth review." *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 415 (1971) (citations omitted). Thus, in reviewing an agency's decision not to prepare an EIS, a court must "determine whether the agency has taken a 'hard look' at the consequences of its actions, 'based [its decision] on a consideration of the relevant factors,' and provided a 'convincing statement of reasons to explain why a project's impacts are insignificant.'" *Native Ecosystems Council v. U.S. Forest Serv.*, 428 F.3d 1233, 1239 (9th Cir. 2005) (quoting *Nat'l Parks & Conservation Ass'n*, 241 F.3d at 730).

Agencies have wide discretion in assessing scientific evidence, but they "must 'take a hard look at the issues and respond[ ] to reasonable opposing viewpoints.'" *Earth Island II*, 442 F.3d at 1160 (internal quotation omitted, brackets in original). "'When specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own experts, even if a court may find contrary views more persuasive. At the same time, courts must independently review the record in order to satisfy themselves that the agency has made a reasoned decision based on its evaluation of the evidence.'" *Id.* (quoting *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 378 (1989)). "If an agency has failed to make a reasoned decision based on an evaluation of the evidence, we may properly conclude that an agency has acted arbitrarily and capriciously." *Id.*

b. Substantial Questions about the Environmental Impact of the Exercises

The district court found that NRDC had raised substantial questions as to whether the SOCAL exercises would have a significant impact on the environment. Jan. 3, 2008 Dist. Ct. Order at 6-7. Accordingly, the court concluded that NRDC had demonstrated probable success on the merits of its claim that the Navy's failure to prepare an EIS was arbitrary and capricious and in violation of NEPA and the APA. *Id.* at 7. The district court did not rely on an erroneous legal premise or abuse its discretion in so concluding.

Initially, we repeat our observation that the Navy, by seeking approval by CEQ of "alternative arrangements" pursuant to 40 C.F.R. § 1506.11, has effectively conceded that the SOCAL exercises will have a significant impact on the environment. *See* 40 C.F.R. § 1506.11. As the text of § 1506.11 indicates, the very purpose of the regulation is to provide for the possibility of alternative arrangements where emergency circumstances require the taking of an action "with significant environmental impact" without observing the requirements of NEPA. *See id.* The fact that the Navy sought relief under § 1506.11 is evidence that the Navy recognizes that the SOCAL exercises have a "significant environmental impact."

Moreover, the fact that "[t]he Navy is currently evaluating the environmental impact of MFA sonar training exercises through its development of the SOCAL Range Complex Environmental Impact Statement," Jan. 15, 2008 CEQ Letter at 2, confirms that, at the very least, the Navy acknowledges that substantial questions have been raised as to whether the SOCAL exercises will have a significant impact on the environment. Accordingly,

were we not to review the Navy's EA, we would have little difficulty concluding that the district court did not rely on an erroneous legal premise or abuse its discretion in determining that NRDC has demonstrated probable success on the merits of its NEPA claim. Our own review of the EA leads us to the same conclusion.[48]

The Navy argues that the district court made a clearly erroneous assessment of the evidence of the effect of MFA sonar on marine mammals in the waters of southern California. Specifically, the Navy asserts that the court misunderstood the significance of the EA's reference to the 548 predicted instances of Level A harassments of beaked whales. The Navy explains that it categorized predicted sonar exposures to beaked whales as Level A harassments not because beaked whales were expected to suffer such harassments but rather because such categorization would allow the Navy to analyze the potential impacts of MFA sonar on each beaked whale species in greater detail than it would otherwise.

We find no abuse of discretion in the district court's rejection of the Navy's argument. The Navy's explanation for its categorization of predicted sonar exposures to beaked whales as Level A harassments finds no support in the EA, and counsel for the Navy was unable to explain at oral argument on November 8, 2007, how classifying exposures as Level A harassments would allow the Navy to better analyze the impacts of MFA sonar on various species of beaked whales. Rather, the EA makes

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[48] The Navy does not reargue the merits of NRDC's NEPA claim in its current appeal brief. We therefore assume that the Navy's current position is the same as set forth in its brief filed with our court on September 14, 2007.

clear that the Navy categorized the expected exposures to beaked whales as Level A harassments because it concluded, in light of recent beaked whale strandings linked to the use of MFA sonar, that beaked whales may be more sensitive to sonar exposures than other cetaceans. Because the lack of data precluded the Navy from establishing separate impact thresholds for beaked whales, the Navy decided that for beaked whales it would categorize exposures as Level A harassments that would constitute Level B harassments for other cetaceans.

The Navy's decision to do so is supported by ample evidence indicating that beaked whales are particularly vulnerable to MFA sonar. The documented strandings of marine mammals that have been linked to the use of MFA sonar overwhelmingly involve beaked whales.[49] Indeed, according to the International Whaling Commission the evidence associating the use of MFA sonar with beaked whale strandings is "very convincing" and "appears overwhelming." Similarly, a Navy-sponsored study

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[49] We reject the Navy's argument that the district court erred by relying on evidence not included in the Navy's administrative record in reaching its conclusion that NRDC had demonstrated probable success on the merits. While generally a district court's review under the APA is limited to the administrative record before the agency, it may consider evidence beyond the administrative record in certain situations. *See, e.g., Ranchers Cattlemen Action v. USDA*, 499 F.3d 1108, 1117 (9th Cir. 2007). The district court properly considered extra-record evidence here because the Navy never submitted an administrative record to the district court despite having had almost a year to do so since NRDC filed its complaint on March 22, 2007. The Navy has not offered any valid explanation for why it failed to submit an administrative record. We note that the Navy filed a fourteen-volume record in the related litigation concerning the 2006 RIMPAC exercise only two days after NRDC filed its complaint in that case.

found "completely convincing" the evidence that MFA sonar had caused strandings of beaked whales.

Moreover, to the extent that a paucity of scientific data prevents the Navy from establishing meaningful impact thresholds for beaked whales, that is a reason to conduct further research and prepare an EIS—not a reason to ignore the data that does exist and proceed with the SOCAL exercises without adequate mitigation measures. As we explained in *National Parks*:

> An agency must generally prepare an EIS if the environmental effects of a proposed agency action are highly uncertain. Preparation of an EIS is mandated where uncertainty may be resolved by further collection of data or where the collection of such data may prevent speculation on potential . . . effects. The purpose of an EIS is to obviate the need for speculation by insuring that available data are gathered and analyzed prior to the implementation of the proposed action.

Nat'l Parks & Conservation Ass'n, 241 F.3d at 732 (internal citations and quotations omitted).

The Navy also contends that the district court misunderstood the significance of the nearly 170,000 predicted Level B harassments. First, the Navy argues that this number is an overestimate resulting from conservative assumptions in its model and from the fact that it does not take into account the mitigation measures the Navy would employ. However, the Navy stated in the EA that its prediction of the harm to marine mammals was "consistent with the best available science." And while the Navy "assumed" that its prediction was an overestimate, it acknowledged that the science was "incomplete," which

apparently precluded the Navy from even approximating by how much it had overestimated the harm. Likewise, the Navy made no attempt to approximate how many Level B harassments its mitigation measures would prevent.[50] Accordingly, we, like the Navy, must rely on the estimate of nearly 170,000 predicted Level B harassments.

Second, the Navy argues that most of the predicted Level B harassments are below the threshold for causing temporary hearing loss and will induce only temporary behavioral responses which can be as minor as causing an animal to avoid the noise source. But according to the Navy's own definition of Level B harassment, those temporary behavioral responses are nevertheless profound, as they cause "disruption of natural behavioral patterns . . . to a point where such behaviors are abandoned or significantly altered."[51] As the NMFS' Biological Opinion makes clear, such disruption of natural behavioral patterns can be lethal for marine mammals.

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[50] The Navy has estimated that in the 2006 RIMPAC exercise, the employed mitigation measures prevented approximately 100 marine mammals from being exposed to MFA sonar. Even ignoring the fact that the mitigation measures employed in the 2006 RIMPAC exercise were more stringent than those the Navy has agreed to employ in the SOCAL exercises, that estimate would suggest that in the fourteen SOCAL exercises the mitigation measures would prevent only 1,400 exposures to marine mammals (14 exercises x 100 prevented exposures). Accordingly, the estimate of 170,000 Level B harassments would hardly be diminished by the Navy's current mitigation measures.

[51] The Navy derived this definition from the MMPA, 16 U.S.C. § 1362(18)(B)(ii), which was amended in 2003 to exclude from the definition those acts that disrupted natural behavioral patterns but not to the point where the behaviors were abandoned or significantly altered. *See* H.R. Rep. No. 99(I), 108th Cong. 1 Sess. 2003 (5/14/03).

While the EA also states that it is "highly unlikely" that Level B harassments would cause disturbance to a point where behavioral patterns are abandoned or significantly altered, the EA provides no support for that statement and fails to explain why those harassments are nevertheless classified as Level B under the EA's own definition. The district court did not abuse its discretion in determining that such a conclusory statement does not dispense with the requirement of preparing an EIS. *See Ocean Advocates*, 402 F.3d at 864 ("[An agency] cannot avoid preparing an EIS by making conclusory assertions that an activity will have only an insignificant impact on the environment.").

Next, the Navy argues that it was "entitled to rely" on the conclusion of the NMFS in its Biological Opinion, which the district court held satisfied the NMFS' statutory obligation, *see* 16 U.S.C. § 1536(a)(2), that the SOCAL exercises were not likely to jeopardize the continued existence of threatened or endangered marine mammal species. But the NMFS opined only on the effects of MFA sonar on six species of marine mammal,[52] which do not include several rare or uncommon species of marine mammal that are expected to be exposed to a significant number of sonar harassments.[53] For example,

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[52] Those six species are the fin whale, humpback whale, sei whale, sperm whale, and Guadalupe fur seal.

[53] While in a recent memorandum—written well after the Navy prepared its EA—the NMFS concluded that the Navy's own mitigation measures "will minimize the likelihood of beaked whales being caught in circumstances that characterize known strandings of beaked whales," Jan. 9, 2008 Memorandum from NMFS to the Under Secretary of Commerce for Oceans and Atmosphere at 3, the NMFS did not conclude that the Navy's measures would prevent direct physical injury (such as tissue damage) to beaked whales. Indeed, the NMFS

the EA predicts 436 Level A harassments of Cuvier's beaked whales. According to NOAA, as few as 1,121 Cuvier's beaked whales may exist in California, Oregon and Washington combined. Likewise, the EA predicts 1,092 Level B harassments of bottlenose dolphins, of which only 5,271 may exist in the California Coastal and Offshore stocks.

The Navy suggests that the test is whether the continued existence of marine mammal species is jeopardized. This is wrong. An agency action can have "significant effects" on the environment short of threatened extinction. NEPA regulations promulgated by CEQ provide that "significantly" has two components: context and intensity. 40 C.F.R. § 1508.27. Context refers to the setting in which the proposed action takes place, in this case the Southern California Operating Area. *See id.* § 1508.27(a). Intensity means "the severity of impact." *Id.* § 1508.27(b). In considering the severity of the potential environmental impact, a reviewing agency may consider up to ten factors to help inform the "significance" of a project, including the degree to which the effects on the quality of the human environment are likely to be "highly controversial" and the degree to which the possible effects on the human environment are "highly uncertain or involve unique or unknown risks." *Id.* §§ 1508.27(b)(4), (b)(5). We have held that "one of these factors may be sufficient to require preparation of an EIS in appropriate circumstances." *Ocean Advocates*, 402 F.3d at 865; *see Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 508 F.3d 508, 553 (9th

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acknowledged that "the mechanism by which MFA sonar appears to be injurious to beaked whales is poorly understood." *Id.* at 4.

Cir. 2007); *Nat'l Parks & Conservation Ass'n*, 241 F.3d at 731.

Notably, whether an agency action will jeopardize the continued existence of an endangered or threatened species is not among these factors. *See* 40 C.F.R. § 1508.27(b). However, the degree to which the action may "adversely effect" an endangered or threatened species *is*. *See id.* § 1508.27(b)(9). While the NMFS' Biological Opinion concluded that the SOCAL exercises were not likely to jeopardize the continued existence of the six endangered species it studied, it nevertheless acknowledged that the exercises "may adversely affect" those species. Thus, while the Navy was not required to disregard the NMFS' "no jeopardy" opinion, *see Envtl Prot. Info. Ctr. v. U.S. Forest Serv.*, 451 F.3d 1005, 1012 (9th Cir. 2006), the Biological Opinion by its own terms makes clear that the SOCAL exercises may "significantly" affect the environment, *see Greater Yellowstone Coalition v. Flowers*, 359 F.3d 1257, 1275-76 (10th Cir. 2004) (regarding as not determinative for NEPA purposes the Fish and Wildlife Service's "no jeopardy" opinion as to bald eagles).

The Navy further argues that its finding of no significant impact was not arbitrary and capricious because no sonar-inflicted injuries have been observed in the Southern California Operating Area in almost forty years of MFA sonar use by the Navy. But as explained above, that fact has limited probative value in establishing whether marine mammals will in fact be harmed by the Navy's use of MFA sonar. Exposure to MFA sonar may physically and behaviorally harm marine mammals even if it does not cause them to strand. And absent stranding, such harm is difficult to observe. That is particularly

true for the beaked whale—the marine mammal most vulnerable to MFA sonar—in which a population decline of 50% over 15 years would go undetected as a decline at all in 90% of the beaked whale stocks.

Finally, the Navy claims that the correlation between the past marine mammal strandings and MFA sonar is irrelevant because the combination of environmental conditions "found at the locations of documented marine mammal stranding incidents" is not present in the Southern California Operating Area. But contrary to this claim, the EA indicates that the Navy has studied only the stranding in the Bahamas in 2000 and not any of the other stranding events.

Moreover, while the Navy's study of the Bahamas stranding identified a combination of factors that contributed to the whales' injury—the presence of a strong surface duct, unusual water bathymetry, intensive use of multiple sonar units over an extended period of time, a constricted channel with limited egress, and the presence of beaked whales that appear to be sensitive to the frequencies produced by these sonars—the EA provided no supporting data or analysis for its conclusion that this combination of factors does not exist in the Southern California Operating Area. Thus, we find no abuse of discretion in the district court's conclusion that the Navy has failed to provide the support for its conclusion that NEPA requires. *See* 40 C.F.R. § 1502.24.

In addition, the Navy's Bahamas study acknowledged that combinations of factors different from the one present in the Bahamas "may be *more* or less likely to cause strandings" (emphasis added). Thus, even if the combination of factors present in the Bahamas in fact does not exist in the Southern California Operating Area, the com-

bination of factors that *does* exist may be even more likely to cause injury to marine mammals. The EA does not explore that possibility.

In sum, the district court did not abuse its discretion in concluding that NRDC raised substantial questions as to whether the SOCAL exercises would have a significant impact on the environment. All of the reasons stated in the EA for why the Navy believed the SOCAL exercises would not have the deleterious effect that the Navy's own model predicted were cursory, unsupported by cited evidence, or unconvincing. Thus, we find ample support for the district court's conclusion that the Navy has not "articulate[d] a rational connection between the facts found and the conclusion[] reached." *Earth Island II*, 442 F.3d at 1156-57 (quoting *Midwater Trawlers Co-op v. Envtl. Def. Ctr.*, 282 F.3d 710, 716 (9th Cir.2002)).

c. The Navy's Mitigation Measures

The district court also concluded that NRDC had demonstrated probable success on the merits of its claim that the Navy's mitigation measures were inadequate to obviate the need for preparing an EIS. Again, we find no reliance on an erroneous legal premise and no abuse of discretion in the district court's conclusion.

The Navy correctly points out that "[a]n agency's decision to forego issuing an EIS may be justified in some circumstances by the adoption of [mitigation] measures" and that those measures, if significant, "need not completely compensate for adverse environmental impacts." *Nat'l Parks & Conservation Ass'n*, 241 F.3d at 733-34 (citations and internal quotation marks omitted). However, we have also held that a "perfunctory description" or "mere listing of mitigation measures, without supporting analytical data," is insufficient to support a finding of

no significant impact. *Okanogan Highlands Alliance v. Williams*, 236 F.3d 468, 473 (9th Cir. 2000) (citations and internal quotation marks omitted). We find no reversible error in the district court's conclusion that the Navy's list of proposed mitigation measures was precisely such a perfunctory description devoid of supporting data.

The explanation contained in the EA as to why the mitigation measures are effective is contained in four short bullet points, stating that whales and dolphins spend extended periods of time on the surface, have relatively short dive periods, tend to move in large groups (pods), and frequently come to the surface and have a high level of activity there. Three of those bullet points in effect state the same thing, namely that whales and dolphins spend little time under water. This explanation is inadequate for several reasons.

First, the Navy's explanation overlooks the fact that beaked whales spend much of their time under water, surface infrequently, and are generally difficult to detect. A study by NMFS scientists observed that "beaked whales are always difficult to see when they are on the surface, spend most of their time below the surface, and are found at low densities over large areas." Likewise, NRDC submitted a declaration by a biologist who opines that visual monitoring by ship-based lookouts would result in the detection of only 2% of beaked whales in the Southern California Operating Area, in part because of the speed at which Navy vessels travel. Declaration of Dr. Robin William Baird ¶ 6.

Second, the Navy's explanation fails to address the effectiveness of the Navy's safety zones—the only measure that directly reduces exposure of marine mammals to MFA sonar. Specifically, the EA fails to explain why

a safety zone of only 1,000 yards is adequate, why reducing the sonar level by 6dB and 10dB at the 1,000-yard and 500-yard marks, respectively, is adequate, and why it is effective to halt MFA sonar transmission altogether only at the 200-yard mark.[54] The Navy's explanation also does not relate to the effectiveness of the measure requiring passive sonar to be used to detect sounds made by marine mammals.

While the Navy claims in the EA that it is "very likely" that lookouts would detect a group of common dolphins because of "frequent surfacing" and group sizes of "over a thousand animals," it notably makes no such claims about Cuvier's beaked whales, Mesoplodont beaked whales or Ziphiid beaked whales. Indeed, the EA acknowledged that Cuvier's beaked whales and Mesoplodont beaked whales exhibit a range of dives lasting up to 87 minutes.

Moreover, while the EA claims that it is "very likely" that Baird's beaked whales will be detected by lookouts, it states nothing about the frequency with which those whales surface. While it may be that, as the EA states, beaked whales are large in size and travel in groups of between nine and thirteen animals, those facts hardly prove the effectiveness of visual surveillance measures

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[54] As stated earlier, the Navy has recently agreed to adopt safety zones with radii of 1,000, 500 and 200 meters instead of 1,000, 500 and 200 yards. However, the radius of the Navy's outer safety zone is still half of the radius recommended by the CCC, resulting in a safety zone that is 75% smaller than the one found necessary by the CCC.

Notably, NRDC has submitted declarations by scientists who state that sonar levels even below the Navy's lowest impact threshold of 173 dB may be fatal and that sonar sound can travel up to hundreds of miles under water, which suggests that the Navy's significantly smaller safety zones are inadequate. *See* Parsons decl. ¶ 13, Weilgart decl. ¶ 10.

considering that beaked whales generally come to the surface infrequently.

We find further support for the district court's conclusion that the Navy's mitigation measures did not obviate the need to prepare an EIS in the fact that, as explained above, the Navy refused to adopt several of the more aggressive mitigation measures recommended by the CCC, employed in the 2006 RIMPAC exercise, or imposed by the Department of Defense for non-RIMPAC exercises in 2006. Specifically, the Navy refused to:

- Expand the outer safety zone to 2 kilometers;[55]
- Reduce sonar power in conditions of low visibility or strong surface ducting;
- Avoid training in areas known to have high concentrations of marine mammals or during the gray whale's migratory season;
- Monitor for 30 minutes prior to commencement of MFA sonar use;
- Restrict operation of MFA sonar within 25 kilometers from the 200-meter isobath;
- Restrict operation of MFA sonar within 12 nautical miles from the coast;[56] and

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[55] The Navy did not discuss this measure in its EA, let alone explain why it would not be effective. In its "after action report" following the 2006 RIMPAC exercise, the Navy disposed of this mitigation measure simply by declaring it "not prudent" and "without scientific merit."

[56] The Navy asserts on appeal that the SOCAL exercises will occur more than twelve nautical miles from the mainland coastline, but concedes that the exercises will occur within twelve nautical miles of Clemente Island, which falls within the Southern California Operating

- Restrict operation of MFA sonar in choke points, constricted channels, or canyon-like areas.[57]

Notably, as to most of these measures the Navy does not contest that they would be effective. While the Navy claims that some of the measures would adversely affect its ability to achieve the objectives of the exercises, that does not render the measures the Navy *has* adopted adequate to avoid the need for preparing an EIS. Indeed, the Navy states in its "after action report" following the first three SOCAL exercises that in future exercises it intends to incorporate data collection necessary to address the question of how many marine mammals not observed by lookouts may have been exposed to dangerous sonar levels, and will integrate additional monitoring tools and techniques. While the Navy's intent is commendable, it implicitly acknowledges that its current mitigation and data collection efforts are less than adequate.

We conclude that the district court did not abuse its discretion in determining that the Navy's cursory explanation in the EA for why its mitigation measures are ef-

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Area. In its January 3, 2008 preliminary injunction order the district court required the Navy to refrain from using MFA sonar within 12 nautical miles from the California coastline. Jan. 3, 2008 Dist. Ct. Order at 14.

[57] The parties disagree as to whether there are any choke points in the Southern California Operating Area. In its January 3, 2008 preliminary injunction order the district court found that the Catalina Basin poses the same concerns as a choke point: ingress and egress to the basin are restricted and the area has a high density of marine mammals. Jan. 3, 2008 Dist. Ct. Order at 17. Accordingly, the district court ordered the Navy to refrain from using MFA sonar in the Catalina Basin. *Id.* at 17-18.

fective does not demonstrate that those measures "constitute an adequate buffer against the negative impacts" that may result from the SOCAL exercises. *See Nat'l Parks & Conservation Ass'n*, 241 F.3d at 734. Accordingly, we uphold the district court's conclusion that the Navy's reliance on its incomplete mitigation plan in deciding not to prepare an EIS was likely arbitrary and capricious and affirm its determination that NRDC has demonstrated probable success on the merits of its NEPA claims. *Cf. Wetlands Action Network v. U.S. Army Corps of Eng'rs*, 222 F.3d 1105, 1112 (9th Cir. 2000).[58]

B. Possibility of Irreparable Injury

In our November 13, 2007 order we affirmed the district court's conclusion that NRDC had met its burden of demonstrating the possibility of irreparable injury. *NRDC*, 508 F.3d at 886. We now explain that decision.

As the district court noted, "[w]here, as here, plaintiffs demonstrate a likelihood of prevailing on the merits

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[58] The district court also concluded that NRDC had demonstrated probable success on the merits of its claims that the Navy violated NEPA by preparing an EA that failed to adequately consider reasonable alternatives to its proposed action, *see, e.g., Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1998) (explaining that under NEPA federal agencies must sufficiently study, develop, and describe alternatives as part of the "environmental decisionmaking process"), as well as the cumulative impacts of its actions, *see, e.g., Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 994 (9th Cir. 2004) (explaining that an EA must provide a "useful analysis of the cumulative impacts of past, present, and future projects"). Jan. 3, 2008 Dist. Ct. Order at 8-10. We decline to address this aspect of the district court's order as we have already concluded that the court did not abuse its discretion in finding that NRDC has demonstrated probable success on the merits of its other NEPA claims

of their claims, injunctive relief is appropriate where there is a 'possibility of irreparable harm.'" Jan. 3, 2008 Dist. Ct. Order at 12 (quoting *Faith Ctr. Church Evangelistic Ministries v. Glover*, 480 F.3d 891, 906 (9th Cir. 2007)). NRDC must show the possibility of irreparable harm to its membership. *See Friends of the Earth, Inc. v. Laidlaw Environmental Services (TOC), Inc.*, 528 U.S. 167, 180-81 (2000). After analyzing the "numerous scientific studies, declarations, reports, and other evidence submitted," the district court concluded that NRDC had established "to a near certainty" that use of MFA sonar in the SOCAL exercises will cause irreparable harm to the environment and to NRDC's membership. Jan. 3, 2008 Dist. Ct. Order at 12.

The Navy argues that the harm resulting to the environment from the use of MFA sonar in the SOCAL exercises is merely "speculative." But the Navy's own EA proves otherwise. The EA estimates that the use of MFA sonar in the SOCAL exercises will result in 564 instances of physical injury including permanent hearing loss (Level A harassment) and nearly 170,000 behavioral disturbances (Level B harassment), more than 8,000 of which would also involve temporary hearing loss. As explained above, while the Navy protests that these figures are overestimates resulting from its conservative approach, the EA makes clear that the figures are "consistent with the best available science." Indeed, the Navy's failure to suggest *by how much* its figures overestimate the actual harm to marine mammals confirms that the EA's figures are the best available estimates. Those estimates, in turn, contradict the Navy's suggestion that the harm caused by MFA sonar in the SOCAL exercises is merely speculative.

Moreover, while the record contains no evidence that marine mammals have been harmed by the use of MFA sonar in the Southern California Operating Area, the scientific consensus that MFA sonar may cause injury and death to marine mammals combined with the evidence that such injury, absent a stranding, is difficult to detect—especially in the case of the vulnerable beaked whale—further disproves the suggestion that the harm caused by MFA sonar in the SOCAL exercises is merely speculative.

The Navy also argues that its use of MFA sonar will cause only temporary harm to marine mammals and therefore will not result in irreparable injury. But the EA again undermines the Navy's argument. The EA's estimate that 564 instances of Level A harassment will occur demonstrates that the use of MFA sonar will also cause permanent harm to marine mammals. Likewise, the EA's own definition of Level B harassment indicates that the nearly 170,000 estimated instances of such harassment may result in the outright abandonment of important behaviors by marine mammals.

Finally, the Navy argues that NRDC failed to meet its burden of demonstrating that marine mammals "will suffer irreparable injury at the species or stock-level." For two reasons, the Navy has not shown that the district court relied on an erroneous legal premise or abused its discretion in rejecting this argument.

First, NRDC had only the burden of demonstrating the "possibility of irreparable injury," *Freecycle Network*, 505 F.3d at 902, not that irreparable injury "will" necessarily occur. *See Earth Island II*, 442 F.3d at 1159 (holding that the district court erred in requiring that the plaintiff show a "significant threat of irreparable injury"

because that standard imposes a higher burden of proof than the "mere possibility of irreparable harm" standard).

Second, the Navy has cited no support for the proposition that NRDC was required to demonstrate the possibility of irreparable injury at the species or stock-level. While the Navy relies on *Water Keeper Alliance v. Dep't of Defense*, 271 F.3d 21 (1st Cir. 2001), the court in that case only concluded that the district court did not abuse its discretion in concluding that the "death of even a single member of an endangered species" would be an insufficient basis for the plaintiffs to demonstrate the possibility of irreparable injury. *See id.* at 34. Here, the district court found that, according to the Navy's EA, the SOCAL exercises "will cause widespread harm to nearly thirty species of marine mammals, including five species of endangered species, and may cause permanent injury and death." January 3, 2008 Dist. Ct. Order at 12.

In any event, even if NRDC were required to demonstrate the possibility of irreparable injury at the species or stock-level, it would have satisfied that requirement here. As discussed earlier, the EA predicts 436 Level A harassments of Cuvier's beaked whales, of which, according to NOAA, as few as 1,121 may exist in California, Oregon and Washington combined. Similarly, the EA predicts 1,092 Level B harassments of bottlenose dolphins [**ER 400-01**], of which only 5,271 may exist in the California Coastal and Offshore stocks. [**ER 136.**]

Accordingly, we hold that the district court did not rely on an erroneous legal premise or abuse its discretion in concluding that NRDC has demonstrated the possibility of irreparable injury.

C. Balance of Hardships

Having determined that the district court neither relied on erroneous legal premises nor abused its discretion in determining that NRDC has demonstrated a strong likelihood of success on the merits of its NEPA claim and the possibility of irreparable injury, we turn to the "balance of hardships." *See Freecycle Network*, 505 F.3d at 902. The Supreme Court has held that environmental injury, in addition to often being permanent or of long duration, can seldom, by its nature, "be adequately remedied by money damages"; therefore, "[i]f such injury is sufficiently likely, . . . the balance of harms will usually favor the issuance of an injunction to protect the environment." *Amoco Prod. Co. v. Vill. of Gambell, AK*, 480 U.S. 531, 545 (1987).

The Navy maintains, and the district court did not contest, that its ability to train and certify its west-coast strike groups for combat deployment is critical.[59] The

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[59] For example, Captain Martin M. May states that "[m]odern, quiet submarines . . . pose the primary threat to the littorals, control of strategic maritime choke points, transit through international straits, and protection of sea lines of communication vital to international commerce." May decl. ¶ 19. These submarines are "nearly undetectable to U.S. and allied naval forces without the use of [MFA] sonar." *Id.* at ¶ 20. Captain May also asserts that "[s]onar operators and crews must train regularly and frequently to develop the skills necessary to master the art and processes of identifying submarines in the complex subsurface environment[,]" and that computer simulations are not adequate for teaching these skills. *Id.* at ¶ 22. Captain May maintains that if sonar use is enjoined, the Navy would be unable to gauge a fleet's ability to use active sonar. *Id.* at ¶ 26.

Captain May also contends that "[t]he ranges that comprise the Southern California Operating Area make up a unique area in which strike groups can meet all required training objectives at the same time. *Id.* at ¶ 25. Another significant factor is that many of the opera-

Navy argues that its ability to engage in these critical activities is severely degraded by: (1) the requirement that it shut down its use of MFA sonar when a marine mammal is detected within 2,200 yards of a sonar-emitting source; and (2) the requirement that it power down its sonar use by 6 dB (75%) when significant surface ducting conditions are detected. Without proper training and certification, the Navy asserts that it will not be able to deploy a sufficient number of combat-ready forces to provide for the national defense.

The district court rejected the Navy's argument that the balance of hardships tipped in its favor. It concluded that although "the imposition of these mitigation measures will require the Navy to alter and adapt the way it conducts antisubmarine warfare training—a substantial challenge," the measures would not preclude the Navy from effectively training and certifying forces for deployment to combat zones in the western Pacific and the Middle East.[60] Feb. 4, 2008 Dist. Ct. Order.

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ting areas have been surveyed and closely mirror the prospective operating environments in many of the world's 'hot' spots where U.S. Naval forces may be required to fight." *Id.* Training "in our own littorals . . . also build[s] proficiency and experience in our own waters should the enemy attempt to interdict U.S. forces deploying to the area of conflict." *Id.*

[60] The district court crafted its mitigation order after carefully weighing evidence submitted by the parties over a period of "long-standing involvement" with the matters at issue. It took into account the Navy's need for training in certain bathymetry and under certain conditions, and declined to impose several of plaintiffs' proposed "sweeping geographic exclusions" which would have precluded the Navy from training with MFA sonar within 25 nautical miles of the coast, in waters shallower than 1,500 meters to the maximum extent possible, and in the Westfall seamount and the Cortez and Tanner Banks. Jan. 3. 2008 Dist. Ct. Order at 13 n.6.

The gravity of the Navy's asserted hardship requires that we review the district court's determination, as well as the affidavits submitted by the Navy, with the utmost care. We have done so here and, for the reasons set forth below, we conclude that the district court did not abuse its discretion in reaching its determination.

We note that any negative impact on the Navy's ability to successfully conduct its exercises under the challenged mitigation measures is necessarily speculative because the Navy has never before employed these measures in the context of MFA sonar training.[61] The speculative nature of the Navy's asserted harm is reflected in its own characterization of the hardship; the Navy does not claim that the challenged measures will categorically preclude effective training and certification, but rather that they will give rise to an "unacceptable risk" of such a result. Our task, then, is to determine, as best we are able from the record before us, whether the district court erred by giving insufficient weight to the Navy's asserted hardship or by resting its conclusions on clearly erroneous factual findings.

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[61] The Navy has not represented that, if the challenged measures are upheld, it will cease its training exercises. Further, the Navy acknowledged at oral argument on February 27, 2008, that it can certify strike groups despite the inability to train in surface ducting conditions. We therefore proceed under the assumption that the exercises will continue to take place, thereby preserving the possibility of successful training and certification of strike groups. Thus, the district court did not err in failing to weigh the hardship to the Navy, and the public, that would result if the Navy stopped training altogether. Rather, the district court did not abuse its discretion and properly considered the hardship that would result if the Navy were required to abide by the challenged mitigation measures during its remaining exercises in 2008 and 2009.

In support of its assessment that the challenged measures will significantly impair its training exercises, the Navy offers the declarations of various high-ranking officers. For example, Admiral John Locklear explains that the 2,200 yard safety zone will in "[his] opinion . . . have crippling implications on Navy's ability to conduct realistic pre-deployment [ASW] training employing MFA sonar" and "will significantly impact ASW training." Locklear decl. ¶¶ 9, 13. The Chief of Naval Operations refers to an unacceptable risk to strike group certification posed by both the safety zone and surface ducting measures. The judgment of these naval officers and, in particular, that of the Chief of Naval Operations, who is charged with the statutory responsibility under 10 U.S.C. § 5062 for organizing, training, and equipping the Navy, is entitled to substantial deference. *See Khalsa v. Weinberger*, 779 F.2d 1393, 1400 n.4 (9th Cir. 1985) ("The degree of deference due to factual assertions by the military is proportionate to the need for the application of military experience, judgment, and expertise in evaluating the assertion.").

Nevertheless, a court's deference is not absolute, even when a government agency claims a national security interest. *See, e.g., Campbell v. U.S. Dep't of Justice*, 164 F.3d 20, 30 (D.C. Cir. 1998) ("[D]eference is not equivalent to acquiescence . . . ."). The district court therefore did not abuse its discretion when it considered the Navy's declarations along with the evidence contained in the record as a whole. This evidence, much of it submitted by the Navy itself, supports the district court's conclusion that the challenged mitigation measures will not likely compromise the Navy's ability to effectively train and certify its west-coast strike groups. We address the

evidence with respect to each of the challenged mitigation measures in turn.

1. The 2,200 Yard Shutdown Zone

We first consider the requirement that the Navy shut down its use of MFA sonar when a marine mammal is detected within 2,200 yards of a sonar-emitting source.[62] Upon a careful review of the record, we find no clear error in the district court's factual finding that this measure would not compromise the Navy's ability to train and certify its strike groups.

The "after action reports" compiled by the Navy following eight prior COMPTUEX and JTFEX exercises in the Southern California Operating Area undermine the Navy's assessment of the significance of the hardship that this mitigation measure would impose.[63] The reports contain several relevant data points. First, the data re-

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[62] Although our discussion *supra* addresses the evidence contained in the record with respect to the likely impact that the increase in the safety zone's size will have on training and certification, the Navy also contests this measure's application to all sonar sources, including helicopter dipping sonar and sonobuoys which emit less powerful sonar waves. *See, e.g.*, Locklear decl. ¶ 11. Despite the fact that the dipping sonar and sonobuoys have lower energy source levels, they still operate at levels above those shown to pose a danger to marine mammals. *See, e.g.*, Parsons decl. ¶ 13. Accordingly, the district court's decision to include these sonar sources in its mitigation measure was not an abuse of discretion.

[63] During these exercises, the Navy's preferred 1,000 yard safety zone was implemented requiring a 6 dB power-down when a marine mammal was detected within 500-1,000 yards, an additional 4 dB power-down within 200 and 500 yards, and a mandatory shutdown within 200 yards.

We note that the first four of the eight exercises for which the record contains "after action reports" were not part of the current SOCAL exercises.

veal a relatively low likelihood that a marine mammal will be sighted during a time when the Navy's MFA sonar is in use, thereby triggering implementation of this mitigation measure. During two of the eight exercises, no marine mammals were sighted while MFA sonar was in use. In the remaining exercises, sightings rarely occurred while MFA sonar was in use.[64] In fact, over the course of eight exercises lasting one or more weeks each, the Navy observed marine mammals only 51 times while using MFA sonar, which represents less than 15% of all marine mammal observations (345) during those exercises. Second, the data show that the Navy shut down its MFA sonar twenty-seven times over the course of its eight prior exercises. If the district court's mitigation measure had been in place, the Navy would have had to shut down at most an additional twenty-one times: an increase of only two to three shutdowns per exercise.[65] Moreover, of

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[64] The low likelihood of a sighting occurring while MFA sonar is being used does not mean it is rare for marine mammals to be exposed to dangerous noise levels. Rather, two facts demonstrate that the number of sightings does not equate to the number of mammals affected by an MFA sonar event: (1) the presence of marine mammals is difficult to detect by "sight" because many spend significant amounts of time submerged underwater; and (2) sound travels long distances in water (in some cases up to many hundreds of miles) creating the potential for adverse effects beyond the range of sight.

[65] The Navy argues that this mitigation measure will result in a five-fold increase in the number of times it is required to shut down during training exercises. The Navy arrives at this higher number by excluding from its calculation shutdowns that occurred beyond the 200 yard mandatory shutdown zone. But this calculation fails to account for the Navy's actual practice of shutting down sonar in a significant number of cases where marine mammals were detected beyond 200 yards, including at distances as far as 3,100, 4,000, and 6,000 yards. In fact, the "after action reports" reveal that of the twenty-seven times the Navy shut down MFA sonar, it did so fifteen times when the observed marine

the twenty-one additional times that the Navy would have been required to shut down, in eleven of these instances, the Navy powered down its sonar. During these power-downs, the Navy's detection capability was significantly reduced. *See, e.g.*, Bird decl. ¶ 49. Accordingly, if the district court's injunction had been in place, the Navy would have had to compromise detection capability only approximately one more time per exercise. Third, the "after action reports" do not establish any serious, negative effects on operational impact from the smaller safety zone imposed in the eight exercises.[66] Because the broader safety zone likely will not require significantly more shutdowns, the district court's conclusion that this mitigation measure does not pose a significant risk of rendering the Navy's training exercises ineffective is

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mammals were outside the 200 yard mandatory shutdown zone and four times when the marine mammals were at an "unknown" distance.

There is no dispute that the Navy continued to certify its strike groups throughout these exercises. The Navy defends its exclusion of any non-mandatory shutdowns in its count by claiming that any shutdowns that occurred beyond the 200 yard range "likely occurred during tactically insignificant times." Locklear decl. ¶ 11. The record fails to support this claim. The "after action reports" do not distinguish between shutdown events in evaluating training impacts. Indeed, the very same language is used to describe the loss of detection opportunities during all of the exercises, without regard to whether the shutdowns occurred within or beyond 200 yards.

[66] Indeed, the "after action reports" contain only one instance in which the Navy comments that its operation was actually affected by a safety zone mitigation measure. *See* After Action Report for COMPTUEX 07-01 (19 November-19 December 2006) at 6. All the other reports state that the impact of the safety zone measure was "not determinable in the reactions of the particular units" and only speculate that "the proximity of a submarine in the vicinity meant there was a potential submarine detection opportunity missed by the exercise participants."

well-supported. We cannot, on this record, find that the district court abused its discretion.

In addition to data drawn from "after action reports," the record contains other evidence of the feasibility of mandatory shutdown zones of this size, and even greater, during naval training exercises. Indeed, the size of the district court's imposed shutdown zone was based on the CCC's proposed mitigation measure, which in turn was drawn from the Navy's own imposition of a 2,000 meter shutdown requirement when it uses low-frequency active sonar.[67] While the record does not indicate whether low-frequency active sonar has the same effect on marine mammals as MFA sonar, the Navy offers no explanation as to why a 2,000 meter safety zone is feasible during its operation of low-frequency active sonar but not during its use of MFA sonar.[68]

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[67] While we recognize that each Navy has unique operating requirements, the record shows that NATO imposes a 2,000 meter shutdown zone when a marine mammal is detected—the same zone that the district court's preliminary injunction requires. The Australian Navy goes farther, mandating a shutdown of activities if a marine mammal is detected within 4,000 yards of a sonar-emitting vessel.

[68] To the contrary, in its initial submissions to the court, the Navy represented that "[p]rior to [the district court's] requirement, the maximum mandatory shutdown zone the Navy *ever* employed was 200 meters." Jan. 15 Emergency Motion at 16 (emphasis added). This representation is plainly contradicted by the record. In its most recent brief to the court, the Navy clarified that, "Prior to this requirement, the maximum mandatory shutdown zone ever employed *for MFA sonar* was 200 meters." However, the Navy still does not discuss nor defend its ability to implement a 2,000 meter safety zone in its low-frequency, but not in its mid-frequency, sonar activities.

2. The Requirement to Power-Down in Significant Surface Ducting Conditions

We next consider the requirement that the Navy power-down its sonar use by 6 dB when significant surface ducting conditions are detected. Although the Navy stresses the importance of training in surface ducting conditions, it admits—and the record confirms—that such conditions occur relatively rarely in the southern California waters in which the Navy has chosen to conduct its exercises. Indeed, the "after action reports" from JTFEX and COMPTUEX exercises conducted in the Southern California Operating Area in 2006 show that significant surface ducting conditions were not detected during any of those exercises. Yet despite the strike groups' inability to train under such conditions, the Navy certified them. The record, then, undermines the Navy's contention that the district court's mitigation measure regarding surface ducting conditions will significantly impact its ability to certify strike groups.

Thus, although the actual effect of the challenged mitigation measures on the exercises at issue is necessarily speculative, data from past Navy exercises and practices supports the district court's conclusion that the imposition of these measures is not likely to prevent effective training and certification of strike groups. After a thorough review of this record, we are not "left with the definite and firm conviction that a mistake has been committed." *Sports Form, Inc.*, 686 F.2d at 752. To the contrary, there is significant evidence of the Navy's ability to successfully train and certify its strike groups under the conditions imposed by the district court. We therefore conclude that the district court did not abuse its dis-

cretion in ordering the Navy to comply with the challenged mitigation measures.

3. Balancing

As explained earlier, the scientific studies, declarations and reports in the record confirm the district court's determination that irreparable harm to marine mammals will almost certainly result should the Navy be permitted to conduct its remaining exercises without appropriate mitigation measures. *See, e.g.*, Bain decl. ¶ 14 (explaining that "the monitoring and mitigation adopted by the Navy is insufficient to detect, much less prevent, marine mammal injury and mortality"); Declaration of Dr. Thomas A. Jefferson decl. ¶ 4 (describing the link between military sonar and the stranding and deaths of beaked whales and other cetaceans). As the district court observed, the 2,200 yard shutdown zone might protect marine mammals from only "the harshest of sonar-related consequences." Jan. 3, 2008 Dist. Ct. Order at 15.

Further, as the district court noted, the exercises in southern California are only a subset of the Navy's training activities involving active sonar.[69] *Id.* at 12-13. NRDC submitted evidence that the Navy uses active

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[69] Indeed, the EA shows that the Navy considered as alternatives conducting the exercises in other locations, including Alaska and Hawaii, reducing the number of exercises, and using exercise simulation. While the Navy's EA provides reasonably detailed justifications for why the Southern California Operating Area is uniquely suited to these exercises, and demonstrates that the Navy would suffer a certain hardship if the considered alternatives were employed instead, the EA nonetheless shows the Navy is still able to conduct its exercises in alternate locations, in reduced number, or through simulation.

sonar in hundreds of exercises each year throughout the world. The evidence linking several whale strandings to the Navy's use of active sonar in training exercises around the world further confirms that the Navy trains in its use of active sonar in many different areas.

While we are mindful of the importance of protecting national security, courts have often held, in the face of assertions of potential harm to military readiness, that the armed forces must take precautionary measures to comply with the law during its training. *See, e.g., NRDC v. Evans*, 364 F. Supp. 2d 1083, 1143 (N.D. Cal. 2003) ("A tailored injunction reconciles the very compelling interests on both sides of this case, by enabling the Navy to continue to train with and test [low-frequency active] sonar as it needs to do, while taking some additional measures to better protect against harm to marine life."); *Makua v. Rumsfeld*, 163 F. Supp. 2d 1202, 1221 (D. Haw. 2001) ("Although the court recognizes the importance of national security and live-fire training, the potential harm to the Army resulting from a brief preliminary injunction will not be significant."). As in those cases, the district court here carefully balanced the significant interests and hardships at stake to ensure that the Navy could continue to train without causing undue harm to the environment. We review that balance to determine whether it rests on clearly erroneous findings of fact. Having concluded that it does not, we determine that the district court did not abuse its discretion and therefore do not disturb its carefully considered injunction.

We recognize that although the record indicates that the Navy will be able to continue to train and certify strike groups effectively despite the two challenged mitigation measures, there remains the possibility that, when

they are actually implemented, it will be unable to do so. In light of the hardship that the Navy and the public would suffer should the imposed measures actually result in an inability to train and certify sufficient naval forces to provide for the national defense, we conclude that, in the unlikely event that such a situation arises, the Navy may return to the district court to request relief on an emergency basis.

D. Advancement of the Public Interest

There are two dimensions to the public interest in this case. The public has an interest both in national security and in protection of the marine environment. The public interest with respect to national security is the same as that discussed in our consideration of the hardship the Navy would suffer if it were unable to effectively train and certify its strike groups. The public interest with respect to protection of the marine environment is the same as that discussed in our consideration of the irreparable injury NRDC would suffer if the SOCAL exercises were carried out in the absence of appropriate mitigation measures. As our discussion makes clear, we conclude that the district court did not rely on an erroneous legal premise or abuse its discretion in analyzing either of these interests. Accordingly, there is no need for any additional discussion of the public interest.

V. Conclusion

The district court concluded that plaintiffs have met the necessary burden of proof to demonstrate that preliminary injunctive relief is appropriate. It held that plaintiffs have shown a strong likelihood of success on the merits, as well as the possibility of irreparable injury if relief is not granted. It also held that plaintiffs have

shown that the balance of hardships tips in their favor in light of the preliminary injunction's narrowly-tailored mitigation measures which provide that the Navy's SOCAL exercises may proceed as planned if conducted under circumstances that provide satisfactory safeguards for the protection of the environment. Finally, it held that the public interest is advanced by a preliminary injunction that imposes adequate mitigation measures. In reaching these conclusions, the district court neither relied on erroneous legal premises nor abused its discretion. We therefore affirm the district court's preliminary injunction.

AFFIRMED.

APPENDIX B

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 08-55054
D.C. No. CV-07-00335-FMC
Central District of California, Santa Ana

NATURAL RESOURCES DEFENSE COUNCIL, INC.; THE INTERNATIONAL FUND FOR ANIMAL WELFARE; CETACEAN SOCIETY INTERNATIONAL; LEAGUE FOR COASTAL PROTECTION; OCEAN FUTURES SOCIETY; JEAN-MICHEL COUSTEAU, PLAINTIFFS-APPELLEES

CALIFORNIA COASTAL COMMISSION, INTERVENOR-APPELLEE

v.

DONALD C. WINTER, SECRETARY OF THE NAVY; UNITED STATES DEPARTMENT OF THE NAVY; CARLOS M. GUTIERREZ, SECRETARY OF THE DEPARTMENT OF COMMERCE; NATIONAL MARINE FISHERIES SERVICES; WILLIAM HOGARTH, ASSISTANT ADMINISTRATOR FOR FISHERIES OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION; CONRAD C. LAUTENBACHER, JR., ADMINISTRATOR OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION, DEFENDANTS-APPELLANTS

[Filed: Feb. 29, 2008]

ORDER GRANTING PARTIAL STAY

Before: B. FLETCHER, D.W. NELSON, and REINHARDT, Circuit Judges.

As we explain in our opinion issued concurrently with this order, we affirm the district court's January 3, 2008 preliminary injunction order, as modified on January 10, 2008. The preliminary injunction permits the Navy to complete the remaining eight of fourteen scheduled COMPTUEX and JTFEX exercises in the waters off the coast of southern California on the condition that it employ a number of measures designed to mitigate the harm to marine mammals that the district court found would, "to a near certainty," result from the Navy's use of mid-frequency active sonar (MFA sonar). *See* Jan. 3, 2008 Dist. Ct. Order at 12.

The Navy has argued that the balance of hardships tips in its favor because two of the mitigation measures imposed by the district court would significantly limit its ability to conduct anti-submarine warfare training as part of the scheduled exercises and would consequently jeopardize its ability to certify its strike groups as ready for deployment. The two mitigation measures require the Navy to (1) suspend its use of MFA sonar if a marine mammal is detected within 2,200 yards of the sonar source, and (2) reduce the acoustic energy level of MFA sonar by 6 decibels whenever significant surface ducting conditions are detected. *See* Jan. 10, 2008 Dist. Ct. Order.

On this appeal, we do not determine the issues finally but decide only whether the district court relied on an erroneous legal premise or abused its discretion in issu-

ing its preliminary injunction order on the basis of its finding that plaintiffs had a strong likelihood of success on the merits and that the balance of hardships favored them. Thus, the scope of our review at this juncture is limited. In light of the short time before the Navy is to commence its next exercise, the importance of the Navy's mission to provide for the national defense and the representation by the Chief of Naval Operations that the district court's preliminary injunction in its current form will "unacceptably risk" effective training and strike group certification and thereby interfere with his statutory responsibility under 10 U.S.C. § 5062 to "organiz[e], train[], and equip[] the Navy," we *sua sponte* partially and temporarily stay the preliminary injunction as adopted by the district court to the extent provided herein.

We modify the abovementioned two mitigation measures and stay them in their original form. All other provisions of the preliminary injunction shall remain unchanged and in effect. The two modified measures shall be in effect in lieu of the original measures until the expiration of this stay order. We act out of an abundance of caution to protect the important interests at stake in this appeal pending possible further review and in the firm belief that the modified provisions should satisfy the concerns stated by the Chief of Naval Operations in his affidavit, while protecting the marine mammals to the extent possible given those concerns.

The first mitigation measure is modified to require the Navy to suspend its use of MFA sonar if a marine mammal is detected within 2,200 yards of the sonar source, except when MFA sonar is being used at a "critical point in the exercise," in which case the Navy shall

reduce the MFA sonar level by 6 decibels when a marine mammal is detected within 1,000 meters from the sonar source, reduce the MFA sonar level by 10 decibels when a marine mammal is detected within 500 meters of the sonar source and suspend its use of MFA sonar when a marine mammal is detected within 200 meters of the sonar source.[1] A "critical point in the exercise" is a point when, in the discretion of the Admiral overseeing the exercise or the commander of the sonar-emitting vessel, continued use of MFA sonar is critical to the certification of a strike group or the effective training of its personnel. For example, the responsible officer, in his discretion, might determine that a shutdown would fundamentally undermine effective training or certification because the particular exercise underway is at a stage that would be seriously compromised by a shutdown.

The second mitigation measure is modified to require the Navy, when significant surface ducting conditions are detected, to reduce the MFA sonar level by 6 decibels where a marine mammal is detected within 2,000 meters of the sonar source, reduce the MFA sonar level by 10

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[1] We note that the Navy had already agreed to employ the 1,000 meter, 500 meter and 200 meter safety zones before the district court issued its preliminary injunction order. *See* Dec. 14, 2007 Bird decl. ¶ 58.

Consistent with the Deputy Secretary of Defense' January 23, 2007 National Defense Exemption from the Requirements of the Marine Mammal Protection Act, the preliminary injunction exempts the Navy from the 2,200 yard "shutdown" requirement where the detected marine mammal is a dolphin or a porpoise and it appears that the dolphin or porpoise is intentionally following the sonar-emitting naval vessel in order to play in or ride the vessel's bow wave. *See* Jan. 10, 2008 Dist. Ct. Order. This exemption shall remain in effect.

decibels where a marine mammal is detected within 1,000 meters of the sonar source, and suspend its use of MFA sonar where a marine mammal is detected within 500 meters of the sonar source.

The partial stay of the preliminary injunction is entered without prejudice to either party's seeking further relief from the district court in the event of provable actual harm warranting such relief.

This stay shall remain in effect for 30 days from the date of this order, unless a petition for certiorari to the Supreme Court of the United States is sought. If such petition is filed on or before the thirtieth day, the partial stay of the preliminary injunction shall remain in effect until final disposition by the Supreme Court.

SO ORDERED.

APPENDIX C

UNITED STATES DISTRICT COURT FOR THE CENTRAL DISTRICT OF CALIFORNIA

D.C. No. 8:07-cv-00335-FMC-FMOx

NATURAL RESOURCES DEFENSE COUNCIL, ET AL., PLAINTIFFS

v.

DONALD C. WINTER, ET AL., DEFENDANTS

[Filed: Feb. 4, 2004]

ORDER DENYING DEFENDANTS' EX PARTE APPLICATION TO VACATE PRELIMINARY INJUNCTION OR TO PARTIALLY STAY PENDING APPEAL AND ORDER VACATING TEMPORARY STAY

This matter is before the Court on remand from the Ninth Circuit Court of Appeals. The Court was instructed to consider the effect of recent executive actions on its January 3, 2008 Order issuing a preliminary injunction, as modified January 10, 2008, and its January 14, 2008 Order Denying Defendants' Application for a Stay Pending Appeal. The Court has read and considered the Ninth Circuit's Order, as well as Defendants' Application for Immediate Vacatur or Partial Stay Pending Appeal, (docket no. 131, filed January 17, 2008), Plaintiffs' Opposition, and Defendants' Reply thereto. For the

reasons and in the manner set forth below, the Court's Orders stand and Defendants' Application is DENIED. The temporary, partial stay is lifted (docket no. 133).

SUMMARY

In this Order, the Court concludes that its preliminary injunction is not affected by the Council on Environmental Quality's (CEQ) approval of emergency alternative arrangements because there is no emergency. The CEQ's action is beyond the scope of the regulation and is invalid. The Navy is not, therefore, exempted from compliance with the National Environmental Policy Act and this Court's injunction.

The Court also expresses significant concerns about the constitutionality of the President's exemption of the Navy from the requirements of the Coastal Zone Management Act. However, because a finding on this issue is not necessary to the result reached, the Court adheres to the doctrine of constitutional avoidance and does not resolve that issue.

FACTUAL BACKGROUND AND PROCEDURAL HISTORY

Plaintiffs, a coalition of environmental protection groups and a concerned individual (led by the Natural Resources Defense Counsel (NRDC)),[1] brought suit challenging the United States Navy's[2] use of mid-frequency

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[1] Plaintiffs (hereinafter referred to as "Plaintiffs" or "NRDC") are: the NRDC, the International Fund of Animal Welfare, Cetacean Society International, League for Costal Protection, Ocean Futures Society, and Jean-Michel Cousteau. The California Costal Commission (CCC) has intervened.

[2] Defendants (hereinafter referred to as "Defendants" or "the Navy") are: Donald C. Winter, Secretary of the Navy; the United

active (MFA) sonar during training exercises off the coast of Southern California.[3] MFA sonar is a tool that has proven far more effective at detecting modern quiet-running diesel electric submarines than passive sonar. (Decl. of Capt. Martin May ¶¶ 8-10.) MFA sonar, which generates underwater sound at extreme pressure levels, has the unfortunate side effect of inflicting harm on ma-

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States Department of the Navy; Carlos M. Gutierrez, Secretary of Commerce; the National Marine Fisheries Service (NMFS); William Hogarth, Assistant Administrator for Fisheries, National Oceanographic and Atomospheric Administration (NOAA); and Vice Admiral Conrad C. Lautenbacher, Jr., Administrator, NOAA.

[3] This case is one in a series challenging the Navy's use of active sonar in its training exercises. In 2005, the NRDC filed suit challenging the sufficiency of the Navy's compliance with environmental laws, with respect to its sonar use. *Natural Res. Def. Council v. Winter*, CV 05-7513 FMC (FMOx) (C.D. Cal.). That case is pending.

In June 2006, the same plaintiffs filed suit against the same defendants, seeking to enjoin the Navy from using MFA sonar during its Rim of the Pacific (RIMPAC) war games. *Natural Res. Def. Council v. Winter*, CV 06-4131 FMC (JCx) (C.D. Cal.). Following this Court's order granting Plaintiffs' application for a temporary restraining order, the parties entered into a settlement agreement. *Id.*, Temporary Restraining Order (July 3, 2006). Among other measures, the Navy agreed to: (1) use aircraft and passive acoustic sonar to aid in spotting marine mammals; (2) abstain from using MFA sonar in the Northwestern Hawaiian Islands Marine National Monument, or within 25 nautical miles thereof; (3) limit use of MFA sonar to anti-submarine warfare training exercises; and (4) publicize the NMFS's stranding hotline telephone number to ensure public awareness. *Id.*, Settlement Agreement at 3-4 (July 7, 2006).

In 2007, the California Costal Commission (CCC) (intervenor in the present case) filed suit against the Navy. That suit has been stayed pending resolution of the appeal in this case. *Cal. Coastal Comm'n v. U.S. Dep't of the Navy*, CV 07-1899 FMC (FMOx) (C.D. Cal.).

rine life, up to and including death.[4] (*See, e.g.*, Decl. of Thomas Jefferson ¶ 4 and sources cited therein.)

The Navy plans to use MFA sonar during fourteen large-scale training exercises (involving various ships, submarines, amphibious vehicles, rotary and fixed-wing aircraft, and live ordinance) off the coast of southern California between February 2007 and January 2009. (Decl. of Luther Hajek, Ex. 1 at 2-1 to 2-24.) As of this writing, eight exercises have yet to take place. (*See* Defs.' Reply in Supp. of Ex Parte Application.) The Navy's own Environmental Assessment (EA) reports that these activities, comprised of Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Exercises (JTFEX), will

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[4] The tension between military preparedness and environmental protection has received a great deal of scholarly attention of late. *E.g.*, Hope Babcock, *National Security and Environmental Laws: A Clear and Present Danger?* 25 Va. Envtl. L.J. 105, 107 (2007) ("The events of 9/11 have also brought into sharp focus a conflict that this country has not witnessed since the Cold War: the clash between the safety and continuation of the Republic and other values we hold dear, among them a healthy environment."); Colonel E.G. Willard, Lt. Col. Tom Zimmerman & Lt. Col. Eric Bee, *Environmental Law and National Security: Can Existing Exemptions in Environmental Laws Preserve DoD Training and Operational Prerogatives without New Legislation?*, 54 A.F. L. Rev. 65 (2004) (discussing ways to address the military's growing concerns "in recent years about the impacts of growth and environmental requirements on training and operations"); Nancye L. Bethurem, *Environmental Destruction in the Name of National Security: Will the Old Paradigm Return in the Wake of September 11?*, 8 Hastings W.-Nw. J. Envtl. L. & Pol'y 109, 110 (2002) (discussing the Cold War calculation that the military preparedness was worth its price in concomitant environmental damage); Stephen Dycus, *Osama's Submarine: National Security and Environmental Protection after 9/11*, 30 Wm. & Mary Envtl. L. & Pol'y Rev. 1 (2005) (discussing efforts to amend environmental laws on national security grounds).

result in approximately 170,000 "takes"[5] of marine mammals. (*Id.* at 4-46 to 4-47.) These takes are predominantly "Level B harassment exposures," in which marine mammals would be subjected to sound levels of between 170 and 195 decibels,[6] but also include approximately 8,000 exposures powerful enough to cause a temporary threshold shift in the affected mammals' sense of hearing and an additional 466 instances of permanent injury to beaked and ziphiid whales. (*Id.*)

Despite these findings, the Navy concluded that its JTFEX and COMPTUEX exercises in the Southern California Operating Area (SOCAL) would not cause a significant impact on the environment and on that basis decided that the National Environmental Policy Act (NEPA) did not require it to prepare an Environmental Impact Statement (EIS). In addition, the Navy determined that the use of MFA sonar would not affect natural resources in California's coastal zone. Therefore, the Navy submitted a "consistency determination" (CD) to the California Coastal Commission (CCC) for the exercises that did not take the planned use of MFA sonar into account. It also refused to adopt the mitigation measures the CCC subsequently determined were necessary for the Navy's actions to comply with the California Coastal

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[5] The term "take," as defined in the Endangered Species Act, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19).

[6] Decibels are a logarithmic measurement, such that an increase of 10 dB is equivalent to a tenfold increase in acoustic energy. To put these sound levels in perspective, OSHA requires hearing protection to be used where workers are exposed to a sound level of 90 dB for eight hours or 110 dB for as little as thirty minutes. 29 C.F.R. § 1910.95(a).

Management Program (CCMP). (*See* Decl. of Cara Horowitz, Ex. 67 at 9.)

I. Preliminary Injunction

On March 22, 2007, Plaintiffs filed this action against Defendants, seeking declaratory and injunctive relief for Defendants' violations of NEPA, the Endangered Species Act (ESA), the Administrative Procedures Act (APA), and the Coastal Zone Management Act (CZMA). On June 22, 2007, Plaintiffs moved for a preliminary injunction to enjoin the Navy's use of MFA sonar during the SOCAL exercises "until the Navy adopts mitigation measures that would substantially lessen the likelihood of serious injury and death to marine life." In August 2007, after full briefing and oral argument, this Court granted Plaintiffs' Motion for a Preliminary Injunction. Finding Defendants' mitigation measures "woefully inadequate and ineffectual," the Court concluded that Plaintiffs had demonstrated a likelihood of success on their NEPA, CZMA, and APA claims, but not their ESA claim. Particularly relevant here is the Court's finding that Defendants' failure to prepare an Environmental Impact Statement (EIS) pursuant to NEPA contracted their own scientific findings.

II. Mitigation Measures

On August 31, 2007, a panel of the Ninth Circuit Court of Appeals stayed the injunction pending appeal. *Natural Res. Def. Council v. Winter*, 502 F.3d 859 (2007). On November 13, 2007, another panel of the Ninth Circuit remanded to this Court, finding that while Plaintiffs had demonstrated a likelihood of success, the Navy's training with MFA sonar could go forward with the appropriate mitigation measures. *Natural Res. Def. Coun-*

cil v. Winter, 508 F.3d 885 (2007). The order gave the Court until January 4, 2008 to issue a revised injunction, incorporating mitigation measures.

On November 27, 2007, a status conference was held, in which the Court ordered the parties to meet and confer by December 3, 2007 to attempt to agree on mitigation measures. No stipulation was reached. Accordingly, the parties presented possible mitigation measures to the Court. On December 27, 2007, the Court toured the *USS Milius* at the naval base in San Diego, California, to improve its understanding of the Navy's sonar training procedures and the feasibility of the parties' proposed mitigation measures. Counsel for both Plaintiffs, and Defendants were present.

Plaintiffs proposed a number of broad measures to limit the impact of MFA sonar on marine life. These measures included: (1) a 25 nautical mile costal exclusion, (2) exclusion of the Catalina Basin, (3) exclusion of the Westfall seamount, (4) exclusion of Cortez and Tanner Banks, and (5) locating exercises to the maximum extent possible in waters deeper than 1,500 meters. Defendants, by contrast, sought to maintain the *status quo*. The Navy offered to continue employing the mitigation measures outlined in the 2007 National Defense Exemption ("NDE"),[7] as well as several additional measures.

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[7] Defendants have repeatedly described the NDE as laying out "29 mitigation measures." In actual effect, the NDE consists of four basic measures: (1) personnel training (providing approved Marine Species Awareness Training materials for lookouts and commanding officers), (2) on-deck lookouts, armed with binoculars or night vision goggles, to watch for marine mammals, (3) operating procedures to ensure that any sightings of marine mammals are communicated up the chain of command, so that MFA sonar is powered down when a marine

These included: (1) powering down MFA sonar by 6 dB when marine mammals approach within 1,000 meters; powering down an additional 4 dB at 500 meters; and securing MFA sonar at 200 meters; (2) employing two dedicated, and three non-dedicated, marine mammal lookouts at all times when MFA sonar is being used, and providing su[illegible] lookouts with binoculars, night vision goggles, and infrared sensors; (3) staying outside the Channel Islands National Marine Sanctuary, and remaining 5 nautical miles from San Clemente Island's western shore, and 3 nautical miles from its other shores; (4) aerial monitoring for at least sixty minutes before MFA sonar exercises along the Tanner and Cortez Banks during blue whale migration (July to September 2008); and (5) pre-exercise monitoring of gray whale off-shore migration patterns between March 7-21, 2008 and April 15-May 15, 2008.

In crafting its January 3, 2008 Order, the Court determined that while Defendants' proposed measures were inadequate, Plaintiffs' proposed measures were too sweeping. In particular, the Court accepted Defendants' representations that the bathymetry off Southern California's shores presents unique training opportunities. (*See* Decl. Rear Admiral John M. Bird in Supp. of Defs.' Mem. Regarding a Tailored Prelim. Inj. at 17 (stating that

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mammal approaches within 1,000 yards, 500 yards, and "secured" (shutdown) at 200 yards, and (4) coordination and reporting procedures. (January 23, 2007 Mem. from Deputy Sec'y of Def. to Sec'y of the Navy regarding Nat'l Def. Exemption.) In reality, the fourth cate-gory of "mitigation measure" does not mitigate actual harm to marine mammals but assists the Navy and the NMFS in determining the impacts of its exercises. The Court also notes that the NDE now is effect in the 2007 NDE , and not the NDE issued on June 30, 2006 that is also part of the record.

MFA sonar training must be conducted at night, in low-visibility conditions, and in the varying bathymetry present in Southern California's littoral regions to be realistic)). Accordingly, the Court did not impose additional restrictions on Defendants' training exercises at night or during low visibility conditions. The Court rejected Plaintiffs' calls for a 25 nautical mile coastal exclusion zone (as the parties had previously agreed to in Hawaii for the RIMPAC exercises), accepting Defendants' concession that the Navy could maintain a 12 nautical mile exclusion zone without comprising' the quality of its training. (*Id.* at 41-42 (stating that the Navy could restrict training to the defined exercise range, whose eastern boundary does not reach closer than 12 nautical miles to the coast)). For the same reason, the Court refused to preclude naval training around seamounts, near the Tanner and Cortez Banks, or in waters shallower than 1,500 meters.

Instead, the Court opted to forego broad geographical exclusions in favor of measures to promote the sighting of whales and a larger "safety zone" to prevent injurious exposure to MFA sonar. Specifically, the Court ordered the Navy to improve monitoring efforts by: instituting aerial monitoring for sixty minutes before exercises using MFA sonar, providing lookouts with NMFS and NOAA training, and to use existing passive acoustic monitoring devices to the extent possible. In addition, the Navy was ordered to maintain a 12 nautical mile coastal exclusion zone; secure MFA sonar when marine mammals were spotted within 2,200 yards; power down MFA sonar in the presence of significant surface ducting conditions, which cause sound to travel further at higher intensities than it otherwise would; and avoid the use of

MFA sonar in the geographically restricted, biologically rich Catalina Basin.

Defendants sought a stay pending appeal on January 9, 2008. On January 10, 2008, perceiving in Defendants' stay application a misapprehension of its January 3, 2008 Order, and an inadvertent omission by the Court, the Court issued a modified injunction to clarify its meaning. On January 11, 2008, Defendants' filed their notice of appeal. On January 14, 2008, the Court denied Defendants' application for a stay pending appeal.

III. Subsequent Executive Actions

On January 15, 2008, the day after this Court denied the Navy's application for a stay pending appeal, the President issued a memorandum exempting the Navy from compliance with the Costal Zone Management Act.[8]

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[8] The Memorandum reads in its entirety:

By the authority vested in me as President by the Constitution and the laws of the United States, including section 1456(c)(1)(B) of title 16, United States Code, and to ensure effective and timely training of the United States naval forces in anti-submarine warfare using mid-frequency active sonar:

I hereby exempt from compliance with the requirements of section 1456(c)(1)(A) of title 16 (section 307(c)(1)(A) of the Coastal Zone Management Act) those elements of the Department of the Navy's anti-submarine warfare training during Southern California Operating Area Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Exercises (JTFEX) involving the use of mid-frequency active sonar. These exercises are more fully described in the Environmental Assessment/Overseas Environmental Assessment prepared for the Commander, United States Pacific Fleet, dated February 2007.

On January 3, 2008, as modified January 10, 2008, the United States District Court for the Central District of California deter-

Stating that compliance with the CZMA would "undermine the Navy's ability to conduct realistic training exercises," the President concluded that the exercises "are in the paramount interest of the United States" and exempted the Navy from compliance. Mem. for Secretary of Defense and Secretary of Commerce, Presidential Exemption from the Coastal Zone Management Act (January 15, 2008); Decl. Michael Eitel Ex. 18.

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mined that the Navy's use of mid-frequency active sonar was not in compliance with section 1456(c)(1)(A), and issued an order that is appealable under section 1291 or 1292 of title 28, United States Code. On January 11, 2008, the Secretary of Commerce made a written request that the Navy be exempted from compliance with section 1456(c)(1)(A) in its use of mid-frequency active sonar during COMPTUEX and JTFEX. As part of this request, the Secretary of Commerce certified that mediation under section 1456(h) is not likely to result in the Navy's compliance with section 1456(c)(1)(A).

I hereby determine that the COMPTUEX and JTFEX, including the use of mid-frequency active sonar in these exercises, are in the paramount interest of the United States. Compliance with section 1456(c)(1)(A) would undermine the Navy's ability to conduct realistic training exercises that are necessary to ensure the combat effectiveness of carrier and expeditionary strike groups. This exemption will enable the Navy to train effectively and to certify carrier and expeditionary strike groups for deployment in support of world-wide operational and combat activities, which are essential to national security.

(Signed) George W. Bush

Mem. for Secretary of Defense and Secretary of Commerce, Presidential Exemption from the Costal Zone Management Act (January 15, 2008).

Also on January 15, 2008, the Council on Environmental Quality (CEQ), citing 40 C.F.R. § 1506.11, approved "alternative arrangements" for the Navy to comply with NEPA because "emergency circumstances" prevented normal compliance. The CEQ's letter of explanation to the Navy states that the modified injunction issued by this Court "imposes training restrictions . . . that continue to create a significant and unreasonable risk that Strike Groups will not be able to train and be certified as fully mission capable." (CEQ Letter to Donald C. Winter at 3.) After describing parts of this Court's injunction, the CEQ states that "the inability to train effectively with MFA sonar puts the lives of thousands of Americans directly at risk. . . . Therefore, there are urgent national security reasons for providing alternative arrangements under the CEQ regulations." The alternative arrangements include: (1) providing notice to the public regarding ongoing EIS preparation; (2) a commitment to continue research measures "for continual improvement in the quality of information" on the "quantity, distribution, migration, and reactions of marine mammals to MFA sonar;" and (3) maintaining the "29 NDE mitigation measures." (*Id.* at 5-8.)

On the same day, citing these actions by the President and the CEQ, Defendants applied to the Ninth Circuit to vacate the injunction, arguing that the legal bases for the injunction had been eliminated. The next day, January 16, 2008, the Ninth Circuit remanded to this Court to allow it to consider the effect of the President's Order and the CEQ's alternative arrangements on the Court's preliminary injunction "and, in particular, to consider whether these legal developments merit vacatur or a par-

tial stay of the injunction." *NRDC v. Winter*, __ F.3d __, 2008 U.S. App. LEXIS 1423.

Accordingly, the Court here considers two narrow questions: (1) whether the CEQ's approval of alternative arrangements to comply with NEPA, pursuant to 40 C.F.R. § 1506.11, requires the Court to vacate or stay its injunction, and (2) whether the President's Memorandum exempting the Navy from compliance with the Costal Zone Management Act requires the Court to vacate or stay its injunction.

DISCUSSION

I. The National Environmental Policy Act (NEPA)

A. Legal Basis for CEQ's Action—40 C.F.R. § 1506.11

CEQ's approval of "Emergency Alternative Arrangements" (in lieu of preparation of an EIS) for the Navy's use of MFA sonar in connection with the eight remaining SOCAL COMPTUEX and JTFEX is predicated solely on its purported authority to grant such relief under 40 C.F.R. § 1506.11, which provides:

> Emergencies:
>
> Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these regulations, the Federal agency taking the action should consult with the Council about alternative arrangements. Agencies and the Council will limit such arrangements to actions necessary to control the immediate impacts of the emergency. Other actions remain subject to NEPA review.

40 C.F.R. § 1506.11. This regulation, together with other regulations "implementing the procedural provisions of

NEPA," was promulgated in 1978, in response to Executive Order 11,991, issued by President Carter. *See* Proposed Regulations for Implementing Procedural Provisions, 43 Fed. Reg. 25230 (June 9, 1978). Prior to that time, CEQ exercised its powers only in an advisory capacity, without any formal rulemaking authority. *See* Exec. Order No. 11,514 § (3)(h), 3 C.F.R. 106 (1970 comp.).

The reputed goals of the regulations as a whole were to "make the environmental impact statement process more useful to decisionmakers and the public; and to reduce paperwork and the accumulation of extraneous background data, in order to emphasize the need to focus on real environmental issues and alternatives." Exec. Order No. 11,991 § 1, 3 C.F.R. 124 (1978) (amending subsection (h) of section (3) of Exec. Order No. 11,514). CEQ was further entrusted to "include in its regulations procedures (1) for the early preparation of environmental impact statements, and (2) for the referral to the Council of conflicts between agencies concerning the implementation of the [NEPA]." *Id.*

As required, the current regulations provide detailed procedures for the timing and preparation of an EIS, as well as for referral of interagency disagreements. *See, e.g.*, 40 C.F.R. pts. 1502 ("Environmental Impact Statement"), 1504 ("Predecision Referrals to the Council of Proposed Federal Actions Determined to be Environmentally Unsatisfactory"). 40 C.F.R. § 1506.11 is located at the end of part 1506, which is entitled "Other Requirements of NEPA." No definitions of the phrase "emergency circumstances" or references thereto are contained in 1506.11 or in any other regulatory or statutory provision.

B. 40 C.F.R. § 1506.11 Cannot Encompass the Activity at Issue In This Case Because There Are No "Emergency Circumstances"

The Navy maintains that CEQ's grant of "Emergency Alternative Arrangements" deprives Plaintiffs of the "likelihood of success on the merits" of their NEPA claims. Therefore, there is no basis for the Court's issuance of preliminary injunctive relief. Specifically, the Navy urges the Court to find that CEQ's "emergency" determination effectively absolves it of the requirement to prepare an EIS prior to commencing (and completing) the remaining SOCAL COMPTUEX and JFTEX. Plaintiffs counter by insisting that CEQ's actions are beyond the scope of the regulation and/or otherwise invalid.

1. CEQ's Interpretation of 40 C.F.R. § 1506.11 Is Not Entitled to Deference by This Court

The Navy repeatedly insists that CEQ's findings regarding the existence of an "emergency" warranting the provision of alternatives to the EIS process are entitled to great deference. However, although courts have a long tradition of deferring to agency interpretations and decisions in their area(s) of expertise, this deference is nuanced and qualified in several important ways.

First, it is a well entrenched principle of administrative law that courts afford deference to an agency's reasonable interpretation of a *statute* it administers, "if the statute is silent or ambiguous with respect to the specific issue. . . ." *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 843 (1984); *see also Resident Councils v. Leavitt*, 500 F.3d 1025, 1034 (9th Cir. 2007) ("When relevant statutes are silent on the salient question, we assume that Congress has implicitly left a void

for an agency to fill . . . . [and] must therefore defer to the agency's construction of its governing statutes, unless that construction is unreasonable.") (quoting *Ass'n of Pub. Agency Customers, Inc. v. Bonneville Power Admin.*, 126 F.3d 1158, 1169 (9th Cir. 1997) (citing *Chevron*, 467 U.S. at 843-44)) (alteration in original). Second, Courts afford deference to an agency's interpretation of its own *regulations* unless "an alternative reading is compelled by the regulation's plain language or by other indications of the [agency's] intent at the time of the regulation's promulgation." *Thomas Jefferson Univ. v. Shalala*, 512 U.S. 504, 512 (1994); *see also Bowles v. Seminole Rock & Sand Co.*, 325 U.S. 410, 414 (1945) (an agency's interpretation of its own regulation is "controlling" if it is not "plainly erroneous or inconsistent" with the regulation); *Or. Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1125 (9th Cir. 2007) ("Though we normally afford deference to an administrative agency's interpretation of its own regulations, an agency's interpretation does not control, where . . . it is plainly inconsistent with the regulation at issue.") (internal quotations and citations omitted); *Alaska Trojan P'ship v. Gutierrez*, 425 F.3d 620, 627-628 (9th Cir. 2005).

Here, Plaintiffs do not argue that NEPA disallows exceptions for emergencies under *any* circumstances and, concomitantly, that CEQ's promulgation of 40 C.F.R. § 1506.11 was improper in the first instance.[9]

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[9] At one point in their papers, Plaintiffs suggest that CEQ is invested with less than full rulemaking authority because its rulemaking power is derived from an executive order rather than a Congressional delegation, but do not elaborate further or request that the Court invalidate 40 C.F.R. § 1506.11 on its face. *But see* Robert Orsi, *Emergency Exceptions from NEPA: Who Should Decide?*, 14 B.C. Envtl. Aff. L.

Rather, Plaintiffs challenge CEQ's application of the regulation to the facts of the present case, on the grounds that the term "emergency circumstances" cannot be afforded so broad an interpretation as to encompass the Navy's need to continue its long-planned, routine sonar training exercises unmitigated by this Court's order. Accordingly, the Court confines its inquiry to the issue of whether the plain language of the regulation and limited indicia of the agency's original intent compel a more limited interpretation than that afforded by CEQ, thus removing its determination from deferential treatment under *Shalala* and *Seminole Rock*, *supra*.

a. Plain Meaning/Ordinary Usage

Plaintiffs urge that a plain reading of the regulation reveals that its "manifest purpose" is to "permit the government to take immediate remedial measures in response to urgent and unforeseen circumstances not of the agency's own making. . . ." (NRDC Opp'n at 8.) Standard dictionary definitions and the common understanding of the term "emergency" certainly support this reading, as does the language of the regulation itself, which requires that the alternative arrangements be limited to those "necessary to control the *immediate* impacts of the emergency."[10] Indeed, the California Environmental

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Rev. 481, 500-501 (Spring 1987) (suggesting that "[b]y promulgating an emergency exemption which may allow non-compliance with the EIS requirement, CEQ may have gone beyond the scope of the authority granted it by executive order 11,991 . . . .")

[10] For example, the online version of the Oxford English Dictionary defines emergency as "[t]he arising, sudden or unexpected occurrence (of a state of things, an event, etc.)." Oxford English Dictionary Online, *available at* http://dictionary.oed.com/. The Black's Law Dictionary entry for "emergency circumstances" cross-references "exigent

Quality Act (CEQA), which is based on NEPA, defines the term "emergency" to encompass significant, unanticipated occurrences, such as natural disasters. *See* Cal. Pub. Res. Code § 21060.3 ("'Emergency' means a sudden, unexpected occurrence, involving a clear and imminent danger, demanding immediate action to prevent or mitigate loss of, or damage to, life, health, property, or essential public services. [It] includes such occurrences as fire, flood, earthquake, or other soil or geologic movements, as well as such occurrences as riot, accident, or sabotage.").

Notwithstanding this reality, the Navy argues that limiting the regulation's substantive and temporal scope and denying deference to CEQ's findings would be inconsistent with the few other decisions in which courts have endeavored to review whether "alternative arrangements" were warranted under 40 C.F.R. § 1506.11. However, all of those cases involved circumstances of great urgency.

For example, in *Valley Citizens for a Safe Environment v. Vest*, 1991 U.S. Dist. LEXIS 21863 (D. Mass. 1991), the court upheld "alternative arrangements" which permitted the Air Force to fly C-5A transport planes into and out of Westover Air Force Base on a twenty-four hour schedule, in contravention of the terms of an operative EIS. CEQ approved the arrangements in lieu of the Air Force's preparation of a supplemental EIS (SEIS), on the basis that the modified flight schedule was

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circumstances," which include "[a] situation that demands unusual or immediate action and that may allow people to circumvent usual procedures, as when a neighbor breaks through a window of a burning house to save someone inside." Black's Law Dictionary 260, 562 (8th ed. 2004).

essential to supply military equipment and personnel for Operation Desert Storm. 1991 U.S. Dist. LEXIS 21863 at *6-7. The Plaintiff, a non-profit citizens' association, sought to enjoin the increased flight activity until and unless an SEIS was completed. *Id.* at *7. In reaching its decision, the court found that CEQ and the Air Force's determination that the Middle East crisis (*i.e.*, Iraq's invasion of Kuwait) constituted an "emergency" was a "reasonable" one, "given the military's operational and scheduling difficulties and the hostile and unpredictable nature of the Persian Gulf region." *Id.* at *18.

Although this case also involves military operations, it is markedly different from *Valley Citizens.* First and foremost, other than this Court's issuance of its injunction, the Navy and CEQ do not identify any changed circumstances (much less the presence of increased hostilities in a specific region) that would justify invocation of 40 C.F.R. § 1506.11. (*See* Reply at 13-14 ("CEQ considered the expert evidence submitted by the Navy that the training restrictions *imposed in this Court's January 3 Injunction, as modified on January 10,* are likely to make anti-submarine warfare training in the exercises in question ineffective. . . .") (emphasis added); *see also* CEQ Letter at 4 ("[T]he Navy cannot ensure the necessary training to certify strike groups for deployment *under the terms of the injunctive orders.*") (emphasis added)). In addition, the Court's issuance of an injunction in this case was not a sudden or unanticipated event; the Navy has been litigating this case for over ten months and has been involved in parallel litigation for even longer. The Navy's current "emergency" is simply a creature of its own making, *i.e.*, its failure to prepare

adequate environmental documentation in a timely fashion, via the traditional EIS process or otherwise.[11]

The district court's decision in *Crosby v. Young*, 512 F. Supp. 1363 (E.D. Mich. 1981) and the D.C. Circuit's decision in *National Audubon Society v. Hester*, 801 F.2d 405 (D.C. Cir. 1986), are also unhelpful to the Navy's position. In each of those cases, deference was given to CEQ's "emergency" determination based on facts suggesting the need to avert imminent crises outside the agency's control. *See, e.g., Crosby*, 512 F. Supp. at 1380, 1386 (City's need to obtain commitment of federal funding for a development project by a date certain); *Hester*, 801 F.2d at 405-07 (prevention of extinction of California condor). These legitimate crises stand in stark contrast to the Navy's routine training exercises and are consistent with an ordinary understanding of what constitutes an "emergency."[12]

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[11] The Navy itself makes much of the fact that it commenced the process for preparation of an EIS for the "SOCAL Range Complex" as early as December of 2006. *See* 71 Fed. Reg. 76639 (December 21, 2006). As the decision to prepare an EIS necessarily involved a determination that the Navy's pre-planned training activities might have a "significant environmental impact," the Navy should/could have consulted with CEQ about the need for "alternative emergency arrangements" at that juncture (and avoided this litigation altogether). Counsel conceded this point at oral argument, noting that, while the Navy could have sought alternative arrangements earlier, it elected to "proceed cautiously."

[12] At least one scholar has found fault with the *Crosby* decision to the extent that it affords deference to CEQ's findings in an area (economic planning and development) outside of its expertise. *See* Orsi, *supra* note 9, at 506-507 (suggesting that "no court should accord substantial deference to CEQ's decisions on whether an emergency has occurred, unless the circumstances bringing about the emergency are environmental in nature.").

b. Agency Intent at the Time of Promulgation

There is a paucity of historical information concerning the agency's drafting and adoption of 40 C.F.R. § 1506.11, which has never been amended from its original text. In an attempt to fill this gap, Plaintiffs have proffered the declaration of Nicolas C. Yost, who served as CEQ's general counsel from 1977 until 1981 and was the "principal draftsperson" of the regulations. Mr. Yost explains that "[w]ithin the Council at the time of the adoption of the Regulations what we conceived of as an 'emergency' was something characterized by the severity of its impact and by its unexpected and imminent occurrence—for instance, a dam that was failing, with the potential for immediate harm to both people and property." (Yost Decl. ¶ 5.) He further explains that he "would not consider the holding of a planned set of maneuvers or an unfavorable judicial ruling an 'emergency' within the meaning of 40 C.F.R. § 1506.11." (*Id.* at ¶ 7.)

The Navy maintains that Mr. Yost's personal opinions cannot be considered at this juncture and, in any case, are entitled to no weight. The Court agrees, in that Mr. Yost's statements, coming some 30 years after the regulation was promulgated, are an "unreliable guide" to the agency's intent, akin to oft-criticized "subsequent legislative history." *See Chapman v. United States*, 500 U.S. 453, 464 n.4 (1991) (citing *Pierce v. Underwood*, 487 U.S. 552, 566-567 (1988); *Quern v. Mandley*, 436 U.S. 725, 736, n.10 (1978)); *see also Pension Benefit Guar. Corp. v. LTV Corp.*, 496 U.S. 633, 650 (1990) ("[S]ubsequent legislative history is a 'hazardous basis for inferring the intent of an earlier Congress.'") (quoting *United States v. Price*, 361 U.S. 304, 313 (1960)).

Even absent consideration of the Yost declaration, the limited "regulatory history" supports a narrow, rather than a broad interpretation of the phrase "emergency circumstances." The initial, proposed version of 40 C.F.R. § 1506.11 required the agency "*proposing* to take" the emergency action(s) to consult with CEQ regarding alternative arrangements. *See* 43 Fed. Reg. 25243 (June 9, 1978) (emphasis added). However, in adopting the final regulation, the drafters changed "proposing to take" to "taking," to eliminate any inference that consultation must necessarily precede agency action. They explained the need for this change as follows:

> Several commenters expressed concern that the use of the phrase "proposing to take the action" would be interpreted to mean that agencies consult with the Council before emergency action was taken. In the view of these commenters, *such a requirement might be impractical in emergency circumstances and could defeat the purpose of the section.* The Council concurs and substituted the phrase "taking the action." Similarly, the Council amended the section to provide for consultation "as soon as feasible" and not necessarily before emergency action.

Implementation of Procedural Provisions; Final Regulations, 43 Fed. Reg. 55988 (Nov. 29, 1978) (emphases added). This explanation clearly reflects that, at the time of the regulation's drafting, CEQ apprehended the phrase "emergency circumstances" to refer to sudden, unanticipated events, not the unfavorable consequences of protracted litigation. CEQ's contrary interpretation in this case is "plainly erroneous and inconsistent" with

the regulation and, concomitantly, not entitled to deference.[13]

2. Additional Principles of Statutory Construction Preclude a Broad Reading of "Emergency Circumstances"

As explained above, the CEQ and Navy's interpretation of the phrase "emergency circumstances" to include the readily anticipated consequences of this Court's issuance of injunctive relief is contrary to both the plain meaning of the language utilized and the drafters' original intent, to the extent that said intent may be discerned from the limited regulatory record. For the reasons discussed directly below, the application of additional canons of statutory construction further confirms that 40 C.F.R. § 1506.11 is inapplicable to the facts of this case, due to the lack of any *bona fide* "emergency."

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[13] Plaintiffs also argue that CEQ's interpretation and findings are entitled little or no deference because they arise out of an informal, quasi-judicial proceeding, as opposed to formal rulemaking. *See, e.g., Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944). However, because this case involves an agency's informal interpretation of its own *regulations*, rather than the *statute* it administers, *Skidmore* is inapplicable. *See, e.g., Bassiri v. Xerox Corp.*, 463 F.3d 927, 930 (9th Cir. 2006) ("Under *Skidmore*, an agency's interpretation of a statute that is not reached through the normal notice-and-comment procedure does not have the force of law and it not entitled to *Chevron* deference. But where an agency interprets its own regulation, even if through an informal process, its interpretation . . . is controlling . . . unless plainly erroneous or inconsistent with the regulation.") (internal quotation marks and citations omitted).

a. The CEQ and Navy's Broad Interpretation is Contrary to NEPA and Produces Undesirable Outcomes

As Plaintiffs point out, it is well established that NEPA contains no "national security" or "defense" exception. *See, e.g., San Luis Obispo Mothers for Peace v. NRC*, 449 F.3d 1016, 1035 (9th Cir. 2006) ("There is no 'national defense' exception to NEPA . . . . The Navy, just like any federal agency, must carry out its NEPA mandate to the fullest extent possible and this mandate includes weighing the environmental costs of the [project] even though the project has serious security implications.") (internal quotations and citations omitted) (alteration in original). Nevertheless, the CEQ's broad "emergency" determination in this case purports to create precisely such an exemption. (*See* CEQ letter at 4 ("Therefore, there are urgent national security reasons for providing alternative arrangements under the CEQ regulations."))[14]

It is axiomatic that there exists a presumption against reading an exemption into a statute where Congress has

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[14] The Navy insists that 40 C.F.R. § 1506.11 affords an "alternative" to rather than "exemption" from NEPA compliance. However, this distinction is largely academic, as 40 C.F.R. § 1506.11 clearly operates to exempt agencies from the usual rigors involved in the preparation of an EIS, which forms the "heart" of NEPA. *See, e.g., Envtl. Def. Fund, Inc. v. Andrus*, 619 F.2d 1368, 1374-75 (10th Cir. 1980) ("At the heart of NEPA is § 102(2)(C) and its mandate that, under specified circumstances, federal agencies must prepare an Environmental Impact Statement."); *Sierra Club v. Adams*, 578 F.2d 389, 392-93 (D.C. Cir. 1978) ("Section 102(2)(C) of the statute, 42 U.S.C. § 4332(2)(C) (1970), which requires a 'detailed statement' of the environmental impacts of, and alternatives to, various federal actions, has been aptly described as 'the heart of NEPA . . . .'") (citation omitted).

not authorized one. The fact that Congress has created specific exemptions to NEPA (for military training and otherwise) in the past strongly informs the Court's reluctance to read the regulation so broadly as to independently authorize CEQ to do the same, in the absence of a legitimate "emergency." *See, e.g.*, Nat. Def. Auth. Act, Pub. L. No. 106-398 § 317, 114 Stat. 1654, 1654A-57 (2000) ("Nothing in the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) or the regulations implementing such law shall require the Secretary of Defense or the Secretary of a military department to prepare a programmatic, nation-wide environmental impact statement for low-level flight training as a precondition to the use by the Armed Forces of an airspace for the performance of low-level training flights."); Arizona-Idaho Conservation Act, Pub. L. No. 100-696, § 607, 102 Stat. 4571, 4599 (1988) (providing that "the requirements of section 102(2)(c) of the National Environmental Policy Act of 1969 shall be deemed to have been satisfied" in connection with specific construction on site for Mount Graham international observatory.)[15] Indeed, in other cases—cited by the Navy—in which Courts absolved agencies of their NEPA obligations, the agencies were faced with conflicting Congressional mandates. *See, e.g.*, *Gulf Oil Corp. v. Simon*, 502 F.2d 1154, 1157 (Temp. Emer. Ct. App. 1974) (agency action in response to "a determination by Congress in the Emergency Petroleum Allocation Act that immediate emergency action was necessary to avoid foreseen catastrophic nationwide consequences of a critical shortage of crude oil"); *Atlanta Gas*

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[15] Of course, the Court does not mean to suggest that unforseen events (such as foreign invasion or escalation of hostilities) implicating national security cannot be "emergencies" under 40 C.F.R. § 1506.11.

Light Co. v. Fed. Power Com., 476 F.2d 142, 150 (5th Cir. 1973) (NEPA compliance not required where direct conflict existed with agency's other statutory duties under the Natural Gas Act); *Dry Color Mfrs.' Ass'n. v. Dep't of Labor*, 486 F.2d 98, 108 (3d Cir. 1973) (NEP A exemption "justified by the need to accommodate the provisions of NEPA with those of the Occupational Safety and Health Act.")

Moreover, as Plaintiffs repeatedly point out, reading 40 C.F.R. § 1506.11 to permit CEQ to grant broad-sweeping exceptions to the EIS process for routine agency activity in the absence of Congressional authorization directly conflicts with and subverts NEPA's directive that agencies comply with their NEPA duties "to the fullest extent possible." *See* 42 U.S.C. § 4332; *see also* 40 C.F.R. § 1500.6 ("The phrase 'to the fullest extent possible' in section 102 means that each agency of the Federal Government shall comply with that section unless existing law applicable to the agency's operations expressly prohibits or makes compliance impossible."). Courts have consistently afforded this directive an expansive interpretation to exclude from compliance only those situations in which it is truly unachievable. *See Flint Ridge Dev. Co. v. Scenic Rivers Ass'n*, 426 U.S. 776, 787 (1976) ("NEPA's instruction that all federal agencies comply with the impact statement requirement—and with all the other requirements of § 102—'to the fullest extent possible,' 42 U.S.C. § 4332, is neither accidental nor hyperbolic."); *Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1114 (D.C. Cir. 1971) ("We must stress as forcefully as possible that this language does not provide an escape hatch for foot-dragging agencies; it does not make NEPA's procedural

requirements somehow 'discretionary.'"). CEQ and the Navy's expansive reading of 40 C.F.R. § 1506.11 is therefore *ultra vires* to NEPA.

Such a reading also produces the absurd result of permitting agencies to avoid their NEPA obligations by recharacterizing ordinary, planned activities as "emergencies" in the interests of national security, economic stability, or other long-term policy goals. *See, e.g., Ariz. State Bd. for Charter Sch. v. U.S. Dep't of Educ.*, 464 F.3d 1003, 1008 (9th Cir. 2006) ("[W]ell-accepted rules of statutory construction caution us that 'statutory interpretations which would produce absurd results are to be avoided.'") (*quoting Ma v. Ashcroft*, 361 F.3d 553, 558 (9th Cir. 2004)); *Silvers v. Sony Pictures Entm't, Inc.*, 402 F.3d 881, 900 (9th Cir. 2005) ("A . . . consideration in statutory interpretation is practicality, or put another way, the avoidance of an absurd result.") (citation omitted).[16] Assuming arguendo that CEQ approves the requested alternative arrangements in such circumstances, as it has here, what was conceived as a narrow regulatory exception to the EIS preparation requirements would swallow those requirements whole. This cannot be consistent with Congressional intent.

b. The CEQ and Navy's Broad Interpretation Raises Serious Constitutional Questions

Via its January 15, 2008 letter, CEQ purports, in the Navy's own language, to issue "prospective alternative

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[16] By means of example, Plaintiffs posit that CEQ "could declare an 'emergency' to expedite timber leasing on the theory that the cut is necessary to eliminate future fire hazards; or to expedite oil and gas leasing in protected preserves on the theory that additional energy production is a national 'emergency.'" (NRDC Opp'n at 14.)

arrangements for compliance with NEPA," given "the emergency circumstances posed by the Navy's need to conduct its MFA sonar training in light of the Court's injunction . . . ." (Reply at 21.) As discussed above, these "alternative arrangements" encompass, *inter alia*, a series of mitigation measures that were duly considered and rejected as inadequate by this Court. *See supra* page 5.

To this end, there is a serious question as to whether CEQ, an executive body, is sitting in review of a decision of the judicial branch (and, in effect, crafting its own, alternative injunction). As discussed in section II.B.2, *infra*, activity of this nature raises serious constitutional concerns under the Separation of Powers doctrine. Nonetheless, this Court must endeavor to avoid a finding of unconstitutionality. *Meinhold v. U.S.. Dep't of Def.*, 34 F.3d 1469, 1476 (9th Cir. 1994) ("When the constitutional validity of a statute or regulation is called into question, it is a cardinal rule that courts must first determine whether a construction is possible by which the constitutional problem may be avoided.") (citing *New York City Transit Auth.*, 440 U.S. 568, 582 & n.22 (1979); *see also Ma*, 257 F.3d at 1106 ("The Supreme Court has long held that courts should interpret statutes in a manner that avoids deciding substantial constitutional questions.") (citing *DeBartolo Corp. v. Fla. Gulf Coast Bldg. & Constr. Trades Council*, 485 U.S. 568, 575 (1988)) (additional citations omitted).

In affording 40 C.F.R. § 1506.11 a narrow interpretation, the Court may avoid addressing the question of whether the agency's action is constitutional. The Court concludes that CEQ's application of the regulation to this case was improper in the first instance and that the Navy

remains subject to the traditional NEPA requirements which the Court considered at length in its August 2007 and January 2008 orders granting preliminary injunctive relief.

II. The Coastal Zone Management Act (CZMA)

A. Statutory Presidential Exemption Provision

The CZMA provision on which the President's exemption relies reads:

> After any final judgment, decree, or order of any Federal court that is appealable under section 1291 or 1292 of title 28, United States Code . . . that a specific Federal agency activity is not in compliance with [the approved state management program], and certification by the Secretary [of Commerce] that mediation under subsection (h) is not likely to result in such compliance, the President may . . . exempt from compliance those elements of the Federal agency activity that are found by the Federal court to be inconsistent with an approved State program if the President determines that the activity is in the paramount interest of the United States. . . .

16 U.S.C. § 1456(c)(1)(B). From its plain language, the provision allows the President to exempt certain aspects of federal agency activities from compliance with the California Costal Management Plan (CCMP) if doing so is in the "paramount interest" of the country, *but only after* a court first determines that the activities at issue fail to comply with the plan.[17] Thus, the President's power to

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[17] A number of environmental laws contain presidential exemption provisions. None of these provisions, however, include the requirement that the President must wait until after a district court has found an

exempt does not spring into being *until* a federal court has weighed the question of whether an agency activity meets the standard of the CCMP, and concluded that it does not.[18]

The Navy argues that the President has followed the letter of the law. The Court agrees. The Court's injunction is an interlocutory order appealable pursuant to 28 U.S.C. § 1292(a)(2). The President's Memorandum

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agency not to be complying with the law before issuing the exemption. *E.g.*, the Federal Water Pollution Control Act (FWPCA), 33 U.S.C. § 1323 ("The President may exempt any effluent source of any department, agency, or instrumentality in the executive branch from compliance with any such a requirement if he determines it to be in the paramount interest of the United States to do so."); the Clean Air Act (CAA), 42 U.S.C. § 7418(b) ("The President may exempt any emission source of any department, agency, or instrumentality in the executive branch from compliance with such a requirements if he determines it to be in the paramount interest of the Untied States to do so . . . . The President shall report each January to the Congress all exemptions from the requirements of this section . . . together with his reason for granting each such exemption."). See also similar provisions in the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. § 6961(a); the Safe Water Drinking Act, 42 U.S.C. § 300h-7; the Noise Control Act, 42 U.S.C. § 4903(b); and the Power Plant and Industrial Fuel Act of 1978, 42 U.S.C. § 8373.

[18] The provision does not compel any action by the court, to whose final judgment, decree, or appealable order the President's exemption responds. Instead, the federal agency whose activities are ruled improper under the state management plan can seek from the President an exemption from the parts of the law with which it has been found not to comply. The findings of noncompliance stands, but the court's remedy is vitiated by the presidential exemption. This requirement that the President must wait until a court renders a decision raises the question whether the provision, on its face, unconstitutionally requires district court to render non-binding advisory opinions. Because Plaintiffs attack the statute as applied, however, the Court need not consider its facial constitutionality.

granting the exemption specifically states that the Secretary of Commerce "certified that mediation under section 1456(h) is not likely to result in the Navy's compliance with section 1456(c)(1)(A)." The President then found that COMPTUEX and JTFEX are in the "paramount interest" of the United States. Accordingly, the President's exemption complies with 16 U.S.C. § 1456(c)(1)(B).

B. Constitutionality of the Presidential Exemption Provision As Applied

Plaintiffs argue that the application of the statute in this case is unconstitutional. They contend that the President "simply disagreed with this Court's determination that the modified preliminary injunction would protect national security interests while also minimizing harm to marine mammals." (CCC Opp'n at 5.) Since the grounds for President's exemption are the same as the grounds for the Court's injunction, the exemption "reviews and overturns an order of an Article III Court." (*Id.* at 6.) The Navy counters that the President's exemption expressly accepts the Court's finding of noncompliance with the CZMA. The President's Memorandum exempting the Navy's exercises does not state that the Court's finding was wrong, the Navy argues, but rather effectively changes the underlying law by determining that compliance is not possible given the President's assessment of the nation's "paramount interest."

The Navy argues that the President's exemption is not subject to challenge because the President is not an "agency" within the meaning of the Administrative Procedure Act. (Defs.' Reply at 9.) The Court agrees that the President is not an agency. U.S. Const., art. II, § 1. Nevertheless, the President's action is subject to review

for its constitutionality. *Franklin v. Massachusetts*, 505 U.S. 788, 801 (1992). The Court likewise agrees that it may not review the President's determination of what is or is not "in the paramount interests of the United States." *Kasza v. Browner*, 133 F.3d 1159, 1173-74 (9th Cir. 1998) (finding that under RCRA, Congress explicitly left the determination of "the paramount interest" to the President). Rather, the Court undertakes here to decide whether it is required to vacate its injunction *because* of the President's exemption, not whether the President's determination of the paramount interest was justified.

1. Article III Limits on Executive Revision of Judicial Decisions

It is axiomatic that the decision of an Article III court is subject to the review only of a higher court. *Hayburn's Case*, 2 U.S. (2 Dall.) 408 (1792), has long stood "for the principle that Congress cannot vest review of the decisions of Article III courts in officials of the Executive Branch." *Plaut v. Spendthrift Farm, Inc.*, 514 U.S. 211, 218 (1995) (Scalia, J.). At issue in *Hayburn's Case* was the Invalid Pensioners' Act of 1792, which called upon Article III judges to review the pension applications of disabled Revolutionary War veterans. The judges were to submit qualified veterans' names to the Secretary of War. The Secretary of War would then place the qualified veterans on the pensioners' list, unless he suspected "imposition or mistake," in which case the veteran would not be placed on the list. Richard H. Fallon, Daniel J. Meltzer & David L. Shapiro, *Hart & Wechslers's The Federal Courts and the Federal System* 91 (5th ed. 2003). The judges refused this commission, reasoning that the statute allowed executive revisions of judicial decisions, an unconstitutional encroachment on the judicial power

vested in the courts by Article III. It was reasoned that "by the Constitution, neither the Secretary of War, nor any other Executive officer, nor even the Legislature, are authorized to sit as a court of errors on the judicial acts or opinions of this court." *Hayburn's Case* at 410.

Although the political branches may neither review the decision of the courts, nor direct the results of pending cases, *United States v. Klein*, 80 U.S. (13 Wall.) 128 (1872), Congress may change or amend the underlying law, even if this would change the outcome in pending litigation. *Plaut*, 514 U.S. at 214; *see also Stop H-3 Ass'n v. Dole*, 870 F.2d 1419, 1432 (9th Cir. 1989) (citing *Friends of the Earth v. Weinberger*, 562 F. Supp. 265, 270 (D.D.C. 1983) ("Through the passage of legislation which governs the lawsuit, Congress can effectively moot a controversy notwithstanding its pendency before the courts")). In *Plaut*, the Supreme Court held that a statute requiring the courts to reopen *final* judgments in civil lawsuits violated the separation of powers. Justice Scalia explained,

> The record of history shows that the Farmers crafted this charter of the judicial department [Article III] with and expressed understanding that it gives the Federal Judiciary the power, not merely to rule on cases, but to decide them, subject to review only by superior courts in the Article III hierarchy—with an understanding, in short, that 'a judgment conclusively resolves the case' because 'a "judicial Power" is one to render dispositive judgments.'

514 U.S. at 218-19 (citing Frank Easterbrook, *Presidential Reivew*, 40 Case W. Res. L. Rev. 905, 926 (1990)). Later, in *Miller v. French*, Justice O'Connor explained that "[p]rospective relief under a continuing, executory

decree remains subject to alteration due to changes in the underlying law." 530 U.S. 327, 344 (2000). As prospective relief requires "continuing supervisory jurisdiction by the court," such relief "may be altered according to subsequent changes in the law." *Id.* at 347.

2. Whether the President's Actions Constitute Executive Revision

The question before the Court, then, is whether the President's exemption in this case amounts to an executive revision of a judicial decision. The Court must ask: Did the President's exemption effectively change or amend the underlying law, or does it either direct the result or constitute a review of the Court's decision in this case? If the former, there would be no constitutional problem. If the latter, however, the exemption violates Article III by encroaching on the judicial power. As Congress has no power to direct the result in an ongoing case, nor to review a decision of an Article III court, it cannot delegate such power to the President. *See Plaut*, 514 U.S. at 219.

The Navy directs the Court's attention to a number of cases which it claims have "firmly held" that statutes authorizing, and presidential actions pursuant to, presidential exemption provisions do not raise Article III concerns. The Court strongly disagrees with this characterization of existing case law. None of the cases cited by the Navy consider the constitutional question. For example, the Navy points to *Weinberger v. Romero-Barcelo*, which discusses the presidential exemption provision of the Federal Water Pollution Control Act (FWPCA). 456 U.S. 305 (1982). The issue in *Romero-Barcelo* was whether the district court had the discretion to issue any

lesser remedy than injunctive relief where the Navy had failed to timely obtain permits for the discharge of materials into the waters around the Puerto Rican Island of Viecques [*sic*]. The Supreme Court noted that the exercise of such discretion would not contradict, but instead complement, the presidential exemption provision in the statute: "We read the FWPCA as permitting the exercise of a court's equitable discretion . . . to order relief that will achieve compliance with the Act. The [presidential] exemption serves a different and complementary purpose, that of permitting noncompliance by federal agencies in *extraordinary circumstances*." *Id.* at 319 (emphasis added).

The case is distinguishable. The President had not issued an exemption in *Romero-Barcelo*; thus the constitutionality of such an exemption was not before the Court. Rather, the Supreme Court was deciding the proper scope of the district court's discretion under the FWPCA. Responding to arguments that this interpretation of the FWCPA would contradict the standards laid out in the act itself, particularly the presidential exemption, the Supreme Court explained, "Reading the statute to permit the exercise of a court's equitable discretion in no way eliminates the role of the exemption provision in the statutory scheme." *Id.* The district court could formulate relief to ensure compliance with the FWPCA; if "extraordinary circumstances" subsequently arose, the President had the power, "believing paramount national interests so require, to authorize discharges which the District Court has enjoined." *Id.*

In *Kasza v. Browner*, the district court found that the Environmental Protection Agency (EPA) had violated the public disclosure requirements of Resource Conser-

vation and Recovery Act (RCRA) with respect to hazardous waste disposal on a military base. 133 F.3d 1159, 1173. The President, concluding that the relevant documents were classified, exempted them from disclosure under RCRA § 6001(a).[19] *Id.* The district court then declared the matter moot. *Id.* On appeal, the plaintiff did not raise a constitutional question. Instead, the plaintiff made the limited argument that the statute allowed the President to exempt an agency from specific statutory provisions, to exempt certain documents based on their classified status. The Ninth Circuit disagreed, noting that the language stated the President could exempt an agency from compliance with any RCRA "requirement.[20] *Id.*

Here, two aspects of the President's exemption render it constitutionally suspect. First is the timing. This Court originally issued an injunction halting the Navy's training exercises in August 2007. The Court's August 2007 Order was an appealable order; thus, under the

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[19] The President declared: "I hereby exempt the Air Force's operating location near Groom Lake, Nevada from any . . . provision respecting control and abatement of solid waste or hazardous waste disposal that would require the disclosure of classified information . . . to any unauthorized person." *Id.*

[20] The other cases to which the Navy cites do not address the question of the constitutionality of either a statutory provision authorizing a presidential exemption or a specific application of such an exemption. *See Hancock v. Train*, 426 U.S. 167 (1976) (mentioning presidential exemption as part of the CAA's statutory scheme); *California v. Dep't of the Navy*, 624 F.2d 885, 887 n.2, 889 (mentioning the availability of an exemption in the CAA and noting that the Navy had not sought one); *Natural Res. Def. Council v. Watkins*, 954 F.2d 974 (4th Cir. 1992) (noting that, if national security concerns arose, the Department of Energy could seek a presidential exemption from the requirements of the CWA to allow effluent discharge from a nuclear reactor).

terms of 16 U.S.C. § 1456(c)(1)(B), the President *could have acted at that time* to exempt the Navy's training exercises. The Navy apparently did not seek an exemption at that time, instead seeking relief from the Ninth Circuit. It was only after the case was remanded to this Court, and this Court issued its modified injunction and refused the Navy's request for a stay, that the Navy sought an exemption. At oral argument, the Navy explained that it did not need to seek a presidential exemption sooner, because it has heretofore been able to continue its training unaltered and unfettered by this Court's rulings. This strikes the Court as the inter-branch equivalent of forum shopping: So long as the Navy could manage to continue unobstructed, it would consent to appear before this Court and before the Ninth Circuit. Only once the Navy found it could no longer avoid this Court's injunction did it seek more favorable review from the President.[21] Clearly, this exemption does not *change* the underlying law. Rather, the exemption appears to strip the Court of its ability to provide effective relief.

Second is the absence of any considerations other than those already weighed by the Court. The President's Memorandum makes it fairly clear that there are no "extraordinary circumstances" (as contemplated in the *Romero-Barcelo* dictum) arising after the Court's injunction was issued; instead, the President appears to have re-weighed the equities, and come to a different

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[21] Again, this Court and the Ninth Circuit have expended considerable judicial resources in the five months since the first injunction was issued. Given that no new "extraordinary circumstances" appear to have arisen, seeking the presidential exemption in August 2007 would have saved the courts considerable time and effort. *See supra* note 11.

conclusion. The President's exemption, therefore, renders the Court's opinion advisory. If the Court has sided with the Navy and approved the Navy's mitigation plan in its entirety, then it appears that the President would have acquiesced to its ruling. The Navy's plan would have been bolstered by receiving a judicial stamp of approval. Here, however, the Court accepted only some of the Navy's measures, and imposed others the Navy finds burdensome. In response, the President deemed compliance impossible. This leads the Court to the conclusion that its jurisdiction over this case has been illusory: the Court never really had the power to "conclusively resolve the case," as the judicial power requires.

Courts generally defer to the Executive Branch in matters of national security, particularly where the matter in question is "a sensitive and inherently discretionary judgment call [and] is committed by law to the appropriate agency of the Executive Branch." *Dep't of the Navy v. Egan*, 484 U.S. 518, 527 (1988) (deferring to military's decision not to grant security clearance to openly gay woman). *See also Orloff v. Willoughby*, 345 U.S. 83 (1953) (stating that the Army's decision not to award commission to, or alternatively to discharge, a medical specialist is not reviewable). This deference is an acknowledgment of the distinct roles of the Judicial Branch and the Executive Branch in our constitutional system of government.

This deference must be tempered, however, by "[t]he established principle of every free people . . . that the law shall alone govern; and to it the military must always yield." *Dow v. Johnson*, 100 U.S. 158, 169 (1880) (Field, J.). Deference therefore does not mean a court must abjure judicial review whenever a party raises the spec-

ter of national security.[22] Absent judicial review, there would be no independent means of ensuring the continuing vitality of the bedrock "doctrine that the military should always be kept in subjection to the laws of the country to which it belongs." *Id.* Accordingly, throughout the course of this litigation, the Court has deferred to the Navy's representations of the interests of national security, while avoiding using deference to create a judicial exemption from the nation's environmental laws.

III. The Court Need Not Decide the Constitutional Question

Notwithstanding its concerns about the constitutionality of the President's exemption in this case, the Court need not decide that issue in order to uphold the injunction. *See supra* Section (I)(B)(2)(b) (discussing the doctrine of constitutional avoidance). The Court is satisfied that its injunction stands firmly on NEPA grounds. A federal agency may comply with NEPA by completing an EIS, or by issuing an EA supporting a Finding of No Significant Impact (FONSI). Alternatively, an agency may avoid the requirement to prepare an EIS by adopting mitigation measures sufficient to eliminate any substantial questions over the potential for significant im-

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[22] In *Laird v. Tatum*, for example, the Supreme Court held that a suit by civilians seeking redress for the chilling effect of the Army's intelligence gathering program did not present a justiciable controversy because of the absence of a specific present or specific future harm. 408 U.S. 1 (1972). This holding notwithstanding, the Court explained that it had not abandoned its "traditional insistence on limitations on military operations peacetime. . . . [T]here is nothing in our Nation's history or in this Court's decided cases . . . that can properly be seen as giving any indication that actual or threatened injury by reason of unlawful activities of the military would go unnoticed or unremedied." *Id.* at 15-16.

pact on the environment. *Nat'l Parks & Conservation Ass'n*, 241 F.3d 722, 733-34 (9th Cir. 2001) ("In evaluating the sufficiency of mitigation measures, we consider whether they constitute an adequate buffer against the negative impacts that may result from the authorized activity. Specifically, we examine whether the mitigation measures will render such impacts so minor as to not warrant an EIS."). Here, the Navy has not completed an EIS; the Court found its EA and FONSI to be inadequate. The mitigation measures issued on January 3, 2008, as modified January 10, 2008, are necessary to eliminate substantial questions about environmental impacts of the Navy's exercises. Unless it implements these mitigation measures, the Navy may not continue with its training exercises.

IV. A Stay Pending Appeal Remains Unwarranted

When considering whether to issue a stay pending appeal, the district court must consider the following factors: "(1) whether to stay applicant has made a strong showing that he is likely to succeed on the merits; (2) whether the applicant will be irreparably injured absent a stay; (3) whether issuance of the stay will substantially injure the other parties interested in the proceedings; and (4) where the public interest lies." *Hilton v. Braunskill*, 481 U.S. 770, 776 (1987); *Arturovic v. Rison*, 784 F.2d 1354, 1355 (9th Cir. 1986); Fed. R. Civ. P. 62(c). Alternatively, the court may grant a stay if the party seeking the stay "demonstrates . . . that serious questions are raised and the balance of hardships tips sharply in his favor." *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147, 1158 (9th Cir. 2006).

Here, the Court has concluded that the injunction stands firmly on NEPA grounds. The Navy has failed to

demonstrate that it is likely to succeed on the merits on appeal. In addition, as the Court noted in its January 14, 2008 Order Denying Defendant's Motion for Stay Pending appeal, "the imposition of these mitigation measures will require the Navy to alter and adapt the way it conducts anti-submarine warfare training—a substantial challenge. Nevertheless, evidence presented to the Court reflects that the Navy has employed mitigation measures in the past, without sacrificing training objectives. *See, e.g.*, Jan. 3, 2008 Order at 9 and evidence cited therein." There is no evidence that, absent a stay, the Navy will suffer *irreparable* injury. Accordingly, this factor weighs against the imposition of a stay.

By contrast, if the Court were to issue a stay, the harm to Plaintiffs would be substantial. The Navy has already completed six training exercises and will complete eight more in the next eleven months. It is likely that the exercises at issue could be completed, rendering moot months of litigation. Having prevailed twice before this Court, and once before the Ninth Circuit, Plaintiffs would nonetheless obtain no remedy.

Finally, there are two aspects to public interest in this case: the public interest in having a well trained Navy for the purpose of national defense and the public interest in the protection and maintenance of coastal resources, particularly marine mammals. If the court were to grant the stay sought by Defendants, the training exercises at issue in this suit would go forward at the expense of coastal resources. By leaving the injunction in place, the Navy may continue with its training exercises, while limiting negative effects on marine life. Accordingly, the Court is satisfied that the public interest weighs against the issuance of a stay.

For the same reasons, the Court cannot conclude that Defendants have raised "serious questions" and that the balance of hardships tips sharply in their favor. The Court's decision here rests on narrow statutory grounds; the constitutional issue, which does raise substantial questions, was avoided. Furthermore, the Navy may continue with its training exercises while its appeal is pending. The Court therefore does not conclude that the balance of hardships tips sharply in Defendants' favor. Accordingly, Defendant's request for a stay pending appeal is DENIED.

CONCLUSION

The Navy's Ex Parte Application, docket no. 131, is denied in its entirety. The temporary partial stay docket no. 133, is lifted.

Dated this 4th day of February 2008.

/s/ FLORENCE MARIE COOPER
FLORENCE MARIE COOPER
United States District Court Judge

APPENDIX D

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

No. 8:07-cv-00335-FMC-FMOx

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

[Filed: Jan. 10, 2008]

MODIFIED PRELIMINARY INJUNCTION

Pursuant to the Court's Order Issuing Modified Preliminary Injunction (docket no. 102) issued January 10, 2008, the Court hereby order the Navy to immediately implement the following mitigation measures:

1. 12 Nautical Mile Coastal Exclusion Zone

The Navy shall maintain a 12 nautical mile exclusion zone from the California coastline at all times. The great weight of scientific evidence points to avoidance of marine mammal habitat as the most effective means of minimizing sonar-related injury to marine mammals. *E.g.*, Supplemental Decl. Robin William Baird ("Baird Supp'l Decl.") ¶¶ 5, 7-8; Supplemental Decl. Edward

Parsons ("Parsons Supp'l Decl.") ¶ 10; T. Agardy, *et al.*, *A Global Scientific Workshop on Spacio-Temporal Management of Noise: Report of the Scientific Workshop*, Pls.' Ex. 24. From the evidence presented to the Court in connection with the remand order, it appears to the Court that the exclusion of a 12 nautical mile zone adjacent to the coastline is both practicable and reasonably effective. The Navy adhered to a 25 nautical mile exclusion zone for its Rim of the Pacific (RIMPAC) exercises off the coast of Hawaii. Decl. Rear Admiral John M. Bird ¶ 46e (hereinafter "Bird Decl."). In addition, the Navy operated under a 2006 National Defense Exemption ("NDE I") that included a 12 nautical mile coastal exclusion zone. *Id.* Although the Court is cognizant of the high density of rich marine life within 25 nautical miles of the California coastline, it appears from the evidence before the Court that a coastal exclusion of that size would unduly hamper the Navy's training efforts. Accordingly, the Court deems the 12 nautical mile exclusion zone appropriate, in that the Navy has previously acknowledged its practicability and it would bar the use of MFA sonar in a significant portion of important marine mammal habitat.[1]

2. 2200 yard MFA Sonar Shutdown

The Navy shall cease use of MFA sonar (either vessel-based or aircraft-based sonobuoys or active dipping sonar) when marine mammals are spotted within 2200

[1] The Court is likewise convinced that the 25 nautical mile exclusion zone proposed by Plaintiffs is impracticable, in that it would prevent the Navy from training to detect submarines in the very bathymetry in which submarines are likely to hide. Accordingly, the Court finds that the most practicable compromise is to allow the Navy to approach nearer to the shore, but to expand the range in which MFA sonar must be shut down to minimize the exposure of marine mammals.

yards (approximately 2000 meters). The Court is persuaded that the 1000 yard/500 yard/200 yard scheme proposed by the Navy is grossly inadequate to protect marine mammals from debilitating levels of sonar exposure. Bird Decl. ¶ 46f. A number of studies indicate that sonar injures marine mammals not only via acoustic harassment, but by panic-induced rapid diving or surfacing, which leads to decompression sickness (*i.e.*, "the bends"). *Compare* Bird Decl. ¶ 39 to Supplemental Decl. David E. Bain ¶ 7 (hereinafter "Bain Supp'l Decl."); Pls.' Supplemental Exs. 5, 6 (scientific articles detailing "acute embolic disease" and other bubble-induced sickness in marine mammals, caused by sound exposure); Parsons Decl. ¶ 5. Indeed, scientists have observed flight responses by marine mammals during naval exercises at distances as great as 22 kilometers (in the case of killer whales) or even 40 kilometers (Dall's porpoises). Bain Supp'l Decl. ¶¶ 12-13. The Court therefore is persuaded that while the 2200 yard shutdown requirement may protect marine mammals from the harshest of sonar-related consequences, it represents a minimal imposition of the Navy's training exercises.

This mitigation measure may be discontinued (as described in NDE II) where the marine mammals at issue are dolphins or porpoises, and it appears that the dolphins or porpoises are intentionally following the naval vessel in order to play in or ride the vessel's bow wave.

3. Monitoring

a. Pre-Exercise Monitoring: Each day in which MFA sonar is to be used, the Navy shall monitor for the presence of marine mammals for 60 minutes before employing MFA sonar. If marine mammals are detected within 2200 yards, the Navy will wait until: (1) the mar-

ine mammals are seen to leave the vicinity, or (2) the MFA sonar-employing vessel has transited at least 2200 yards away from the marine mammals.

b. During Exercise Monitoring: The Navy will utilize two dedicated National Oceanic and Atmospheric Administration- and NMFS-trained lookouts at all times when MFA sonar is being used. *See* Parsons Supp'l Decl. ¶ 7 (describing dramatically greater mitigation measure compliance when specialist marine mammal observers are present, as compared with ships' crew members). To the maximum extent practicable, the Navy will employ passive acoustic monitoring to supplement the visual detection of the presence of marine mammals. For example, in the San Clemente instrumented range (SCIRC), the Navy shall attempt to use its M3R acoustic monitoring system to monitor the presence of marine mammals. As beaked whales are close to impossible to detect visually, the employment of passive acoustic monitoring, *e.g.* by hydrophones, is the best means of detection and real-time avoidance of beaked whales. Decl. Robin William Baird ¶¶ 6-7 (explaining that detection of beaked whales approaches 0 percent at distances of 1 kilometer or greater and that beaked whales regularly dive for 50-60 minutes before surfacing); Baird Supp'l Decl. ¶¶ 5-6. Accordingly, the Navy shall employ such passive acoustic monitoring before and during MFA sonar use in areas where beaked whales are more likely to be present. *See* Jefferson Decl. ¶ 12 (noting that beaked whales are likely to be present at depths between 1000 meters and 2000 meters around the continental slope); Pls.' Ex. 11 (scientific study indicating that the area off the California coast west to 125.0°W is a key area for beaked whale populations).

c. Aerial Monitoring: The Court understands that the Navy deploys aircraft before and during its training exercises as part of its overall training scheme. Accordingly, the Court orders that the Navy shall use such aircraft to assist in the monitoring of the presence of marine mammals. Pre-exercise dedicated aerial monitoring shall be conducted within the 60 minutes before the start of use of MFA sonar. Aerial monitoring by naval aircraft participating in the exercises shall continue for the duration of exercises when MFA sonar is being used. Any spotting of marine mammals will be communicated to vessels employing MFA sonar with all possible speed, to allow for timely compliance with the safety zone requirement detailed above.

4. Helicopter Dipping Sonar

In addition to aerial monitoring described above, helicopters shall monitor for marine mammals for 10 minutes before deployment of active dipping sonar. If marine mammals are spotted within the 2200 yard safety zone, all use of active dipping sonar shall cease until the helicopter has transited at least 2200 yards away from the marine mammals, or the mammals are seen to exit the safety zone.

5. Surface Ducting Conditions

Surface ducting, in which sound travels further than it otherwise would due to temperature differences in adjacent layers of water, are difficult to predict. Bird Decl. ¶ 52. In addition to making submarines difficult to detect, surface ducting causes the received decibel level of sound to be higher at greater distances than otherwise would be expected. *Id.* Although not predictable,

when significant surface ducting conditions[2] are detected, the Navy shall power down sonar by 6 dB.

6. Choke Points and the Catalina Basin

The parties disagree as to whether the Catalina Basin between the Santa Catalina and San Clemente Islands constitutes a "choke point." The Navy insists that it is not a choke point because it is not "a strategic strait or canal." Defs.' Mem. Regarding Tailored Preliminary Injunction at 11; Bird Decl. ¶ 54. Plaintiffs argue that it is at least a "simulated choke point," and that the Navy previously has referred to the area as such. Pls.' Opening Brief Regarding Appropriate Mitigation Measures at 13 n.6.; *e.g.*, Pls.' Ex. 4 at 93, 136, 204, 239 (Navy Overseas Environmental Assessments describing use of the area as a "simulated strait."). In any event, the Court is satisfied that ingress and egress to the Catalina Basin is restricted, and that the area includes a high density of marine mammals. Baird Supp'l Decl. ¶ 8. Accordingly, the Court orders the Navy to refrain from employing MFA sonar in the Catalina Basin. The Court notes that this requirement is not intended to restrict activities within the San Clemente Island Range Complex (SCIRC), so long as MFA sonar is not employed closer than 5 nautical miles from the western shore of San Clemente Island, as represented in Defendants' papers. Defs.' Mem. at 10-11; Bird Decl. ¶¶ 59, 62.

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[2] Defined in Defendants' papers as "a mixed layer of constant water temperature extending from the sea surface to 100 feet or more." Defs.' Mem. at 18.

7. Continue NDE II Mitigation Measures

The Navy shall continue to employ the mitigation measures listed in NDE II.

To the extent that the requirements of this Order conflict with, or are stricter than, the NDE II mitigation measures, this Order controls.

IT IS SO ORDERED.

Dated: January 10, 2007 [*sic*]

/s/ FLORENCE-MARIE COOPER
FLORENCE-MARIE COOPER, Judge
UNITED STATES DISTRICT COURT

APPENDIX E

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

8:07-cv-00335-FMC-FMOx

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

[Filed: Jan. 10, 2008]

ORDER ISSUING MODIFIED PRELIMINARY INJUNCTION

This matter was originally before the Court on remand from the Ninth Circuit Court of Appeals. The Court read and considered the simultaneous briefs and reply documents submitted by the parties in connection with the remand order. In addition, on December 27, 2007, the Court toured the *USS Milius* at the naval base in San Diego, California, to improve its understanding of the Navy's sonar training procedures and the feasibility of the parties' proposed mitigation measures. Counsel for both Plaintiffs and Defendants were present. On January 3, 2008, the Court issued a preliminary injunction. In response to issues raised in Defendants' subse-

quent Ex Parte Application for Stay Pending Appeal (docket no. 96), filed January 9, 2008, and on its own initiative pursuant to Fed. R. Civ. P. 60(a), the Court hereby modifies the preliminary injunction.

DISCUSSION

On March 22, 2007, Plaintiffs, five environmental protection groups and Jean-Michel Cousteau, filed this action against Defendants, which include the United States Department of the Navy and the National Marine Fisheries Service (NMFS), seeking declaratory and injunctive relief for Defendants' violations of NEPA, the Endangered Species Act (ESA), the Administrative Procedures Act (APA), and the Coastal Zone Management Act (CZMA). On June 22, 2007, Plaintiffs moved for a preliminary injunction enjoining the Navy's use of MFA sonar during the SOCAL exercises "until the Navy adopts mitigation measures that would substantially lessen the likelihood of serious injury and death to marine life." On August 7, 2007, this Court issued an order enjoining the Navy's use of MFA sonar during training exercises off the coast of California (docket no. 50). The Navy appealed the order and obtained a stay of the injunction pending the appeal. (*Natural Res. Def. Council v. Winter*, 502 F.3d 859 (9th Cir. Aug. 31, 2007).) On November 13, 2007, a panel of the Ninth Circuit Court of Appeals vacated the stay and remanded the matter to this Court, with instructions to issue a narrower injunction "to provide mitigation conditions under which the Navy may conduct its training exercise." (*Natural Res. Def. Council v. Winter*, __ F.3d __, 2007 WL 3377229 at * 1 (9th Cir. 2007).) The order imposed a deadline of January 4, 2007, for the issuance of the injunction.

On January 3, 2008, the Court issued a preliminary injunction. On January 9, 2008, Defendants filed an ex parte application seeking a stay of the injunction, pending appeal. Although Defendants requested only a stay of the Court's injunction, and did not ask the Court to modify its existing Order, the parties are aware that the Order was issued under a very restricted time frame set by the Ninth Circuit Court of Appeals. In preparing to issue its injunction, the Court reviewed thousands of pages of documents and briefs and was required to issue the injunction within a few days of the completion of briefing. Accordingly, Defendants Memorandum of Points and Authorities in Support of its Application for Stay Pending Appeal has made the Court aware of some clerical errors and omissions. As a result, the Court's intent in some areas was not made clear in the injunction.[1] The Court hereby modifies the injunction, pursuant to Federal Rule of Civil Procedure 60(a)[2] as follows:

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[1] Among the issues raised in Defendants' application was that the injunction provided for no exception to the mitigation measure for dolphins and porpoises who may intentionally follow naval vessels in order to play on their bow waves. Defendants' injunction also expressed the concern that the injunction required dedicated and continuous aerial monitoring for the duration of exercises, which may last for several weeks. This outcome was not the Court's intention.

[2] The rule reads in relevant part:

> The court may correct . . . a mistake arising from oversight or omission whenever one is found in a judgment, order, or other part of the record. The court may do so on motion or on its own, with or without notice. But after an appeal has been docketed in the appellate court and while it is pending, such a mistake may be corrected only with the appellate court's leave.

On January 10, 2008, the Court reviewed the case docket and found that no notice of appeal has yet been docketed in this Court or before the Ninth Circuit.

1. On page 15 of the January 3 Order, at line 19, the Court adds the following sentence: "This mitigation measure may be discontinued (as described in NDE II) where the marine mammals at issue are dolphins or porpoises, and it appears that the dolphins or porpoises are intentionally following the naval vessel in order to play in or ride the vessel's bow wave."

2. On page 16, the text under subheading "c. Aerial Monitoring" is modified to read: "The Court understands that the Navy deploys aircraft before and during its training exercises as part of its overall training scheme. Accordingly, the Court orders that the Navy shall use such aircraft to assist in the monitoring of the presence of marine mammals. Pre-exercise dedicated aerial monitoring shall be conducted within the 60 minutes before the start of use of MFA sonar. Aerial monitoring by naval aircraft participating in the exercises shall continue for the duration of exercises when MFA sonar is being used. Any spotting of marine mammals will be communicated to vessels employing MFA sonar with all possible speed, to allow for timely compliance with the safety zone requirement detailed above."

3. On page 17, the text under subheading "5. Surface Ducting Conditions" is modified to add the word "significant" to the phrase "surface ducting conditions" in the third sentence. A footnote defining the term is also added. The new footnote reads: "Defined in Defendants' papers as 'a mixed layer of constant water temperature extending from the sea surface to 100 feet or more.' Defs.' Mem. at 18."

CONCLUSION

The Court will issue a modified injunction, reflecting these corrections.

IT IS SO ORDERED.

Dated: January 10, 2007 [*sic*]

/s/ FLORENCE-MARIE COOPER
FLORENCE-MARIE COOPER, JUDGE
UNITED STATES DISTRICT COURT

APPENDIX F

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

No. 8:07-cv-00335-FMC-FMOx

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL.

[Filed: Jan. 3, 2008]

ORDER ISSUING PRELIMINARY INJUNCTION

This matter is before the Court on remand from the Ninth Circuit Court of Appeals (docket no. 60). The Court has read and considered the simultaneous briefs and reply documents submitted by the parties in connection with the remand order. In addition, on December 27, 2007, the Court toured the *USS Milius* at the naval base in San Diego, California, to improve its understanding of the Navy's sonar training procedures and the feasability of the parties' proposed mitigation measures. Counsel for both Plaintiffs and Defendants were present. For the reasons and in the manner set forth below, the Court hereby issues the following preliminary injunction.

FACTUAL BACKGROUND AND PROCEDURAL HISTORY

This litigation arises out of the United States Navy's use of the mid-frequency active (MFA) sonar, a tool hat has proven far more effective at detecting modern quiet-running diesel electric submarines than passive sonar. (Decl. of Capt. Martin May (May Decl.) ¶¶ 8-10.[1]) MFA sonar, which generates underwater sound at extreme pressure levels, has the unfortunate side effect of harming marine life, up to and including causing death. (*See*, e.g., Decl. of Thomas Jefferson (Jefferson Decl.) ¶ 4 and sources cited therein.) The Navy plans to use, or has used, MFA sonar during fourteen large-scale training exercises (involving various ships, submarines, amphibious vehicles, rotary and fixed-wing aircraft, and live ordinance) off the coast of Southern California between February 2007 and January 2009. (Decl. of Luther Hajek (Hajek Decl.), Ex. 1 at 2-1 to 2-24.)

The Navy's own Environmental Assessment (EA) reports that these activities, comprised of Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Exercises (JTFEX), will result in approximately 170,000 "takes"[2] of marine mammals. (*Id.* at 4-46 to 4-47.) These takes are predominantly "Level B harassment exposures," in which marine mammals would be

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[1] Except where indicated, citations to the record refer to evidence submitted in connection with Plaintiff's original motion seeking injunctive relief (docket no. 14), filed June 22, 2007, and not to the supplemental declarations the parties submitted in support of their briefing in response to the Ninth Circuit's remand order.

[2] The term "take", as defined in Endangered Species Act, means "to harass harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct." 16 U.S.C. § 1532(19).

subjected to sound levels between 170 and 195 decibels,[3] but also include approximately 8,000 exposures powerful enough to cause a temporary threshold shift in the affected mammals' sense of hearing and an additional 466 instances of permanent injury to beaked and ziphiid whales. (*Id.*)

Despite these findings, the Navy concluded that its JTFEX and COMPTUEX exercises in the Southern California Operating Area (SOCAL) would not cause a significant impact on the environment and on that basis decided that the National Environmental Policy Act (NEPA) did not require it to prepare an Environmental Impact Statement (EIS). In addition, the Navy determined that the use of MFA sonar would not affect natural resources in California's costal zone and therefore submitted a "consistency determination" (CD) to the California Coastal Commission (CCC) for the exercises that did not take the planned use of MFA sonar into account. It also refused to adopt the mitigation measures the CCC subsequently determined were necessary for the Navy's actions to comply with the California Coastal Management Program (CCMP). (*See* Decl. of Cara Horowitz (Horowitz Decl.), Ex. 67 at 9.)

On March 22, 2007, Plaintiffs, five environmental protection groups and Jean-Michael Cousteau, filed this action against defendants, which include the United States Department of the Navy and the National Marine

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[3] Decibels are logarithmic measurement, such that an increase of 10 dB is equivalent to a tenfold increase in acoustic energy. To put these sound levels in perspective, OSHA requires hearing protection be used where workers are exposed to a sound level of 90 dB for eight hours or 110 dB for as little as thirty minutes. 29 C.F.R. § 1910.95(a).

Fisheries Service (NMFS), seeking declaratory and injunctive relief for the Defendant's violations of NEPA, the Endangered Species Act (ESA), the Administrative Procedures Act (ESA), the Administrative Procedures Act (APA), and the Coastal Zone Management Act (CZMA). On June 22, 2007, Plaintiffs moved for a preliminary injunction enjoining the Navy's use of MFA sonar during the SOCAL exercises "until the Navy adopts mitigation measures that would substantially lessen the likelihood of serious injury and death to marine life." On August 7, 2007, this court issued an order enjoining the Navy's use of MFA sonar during training exercises off the coast of California (docket no. 50). The Navy appealed the order and obtained a stay of the injunction pending the appeal. (*Natural res. Def. Council v. Winter*, 502 F.3d 859 (9th Cir. Aug. 31, 2007).) On November 13, 2007, a panel of the Ninth Circuit court of Appeals vacated the stay and remanded the matter to this Court, with instructions to issue a narrower injunction "to provide mitigation conditions under which the Navy may conduct its training exercise." (*Natural Res. Def. Council v. Winter*, ___F.3d ___, 2007 WL 3377229 at * 1 (9th Cir. 2007).)

DISCUSSION

I. August 2007 Findings

Plaintiffs' initial motion asked the Court to issue a preliminary injunction prohibiting the Navy from using MFA sonar during the remaining eleven SOCAL exercises.[4] In its August 2007 Order, the Court found that

[4] "A preliminary injunction may issue when the moving party demonstrates either '(1) a combination of probable success on the merits and the possibility of irreparable harm; or (2) that serious questions are

Plaintiffs had demonstrated a probability of success on the merits of their first four causes of action, for violations of National Environmental Policy Act (NEPA), the Administrative Policy Act (APA), and the Coastal Zone Management Act (CZMA), but not their fifth cause of action, for violation of the Endangered Species Act (ESA). These findings were not disturbed by the Ninth Circuit's November 2007 decision. Specifically, the Court made the following findings:

A. Probability of Success

1. The National Environmental Policy Act (NEPA)

In their initial motion, Plaintiffs contended that Defendant violated NEPA by (a) failing to prepare an EIS despite the potential for the challenged exercises to have a significant impact on the environment and (b) by failing to prepare an adequate EA that considered the cumulative impacts of, and all reasonable alternatives to, the proposed actions.

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raised and the balance of hardships tips in its favor.'" *Faith Ctr. Church Evangelistic Ministries v. Glover*, 480 F.3d 891, 906 (9th Cir. 2007) (quoting *A&M Records v. Napster, Inc.*, 239 F.3d 1004, 1013 (9th Cir. 2001)); *see also Cmty. House, Inc. v. City of Boise*, 468 F.3d 118, 1123 (9th Cir. 2006). "These two options represent extremes on a single continuum: 'the less certain the district court is of the likelihood of success on the merits, the more plaintiffs must convince the district court that the public interest and balance of hardships tip in their favor." *Lands Council v. Martin*, 479 F.3d 636, 639 (9th Cir. 2007) (quoting *Sw. Voter Registration Educ. Project v. Shelley*, 344 F.3d 914, 918 (9th Cir. 2003) (en banc) (per curiam); *see also A&M records*, 109 F.3d at 1013 (criteria form a "sliding scale" whereby the required degree of harm increases as the likelihood of success decreases); *United States v. Nutri-Cology, Inc.*, 982 F.2d 394, 398 (9th Cir. 1992) (same).

NEPA mandates the preparation of an EIS for all proposed "major Federal action significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). The Ninth Circuit has interpreted this provision as requiring agencies to prepare an EIS "where there are substantial questions about whether a project *may* cause significant degradation of the human environment." *Native Ecosystems Council v. United States Forest Serv.*, 428 F.3d 1233, 1239 (9th Cir. 2005) (emphasis in original). As the preparation of an EIS can be a costly and time-consuming process, agencies first complete an EA. 40 C.F.R. § 1508.9. If, based on this assessment, the agency concludes that the proposed actions will not significantly affect the environment, it may issue a "Finding of No Significant Impact" (FONSI) and forego completion of an EIS. *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1225 (9th Cir. 1988); 40 C.F.R. § 1508.13. Agencies must complete an EA and, as necessary, an EIS before reaching a final decision or making an "irreversible and irretrievable commitment of the availability of resources." *Envtl. Def. Fund, Inc. v. Andrus*, 596 F.2d 848, 852 (9th Cir. 1979).

Defendants insisted that they were not required to prepare an EIS, and that their issuance of a FONSI was proper, because the SOCAL exercises will not cause a significant impact on marine life. In the Ninth circuit, courts reviewing an agency's decision not to prepare an EIS under NEPA "employ an arbitrary and capricious standard that requires [them] to determine whether the agency has taken a 'hard look' at the consequences of its actions, based its decision on a consideration of the relevant factors, and provided a convincing statement of reasons to explain why a project's impacts are signifi-

cant." *Native Ecosystems Council*, 428 F.3d at 1239 (internal quotations and citations omitted). To prevail on a claim that an agency "violated its statutory duty to prepare an EIS, a plaintiff need not show that significant effects will in fact occur. It is enough for the plaintiff to raise substantial questions whether a project may have a significant effect on the environment." *Blue Mts. Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998) (internal quotations and citations omitted).

Addressing these arguments in its August 2007 Order, the Court found that a raised substantial questions as to whether the SOCAL exercises would have significant impact on the environment. Mass strandings of several species of whales following naval exercises have been documented in the Bahamas, the Canary islands, Hawaii, North Carolina, Japan, Greece, Spain, Taiwan, the Madeira archipelago, and the U.S. Virgin Islands. *See generally*, Horowitz Decl. Exs. 1-16. Following comprehensive studies of these events, the International Whaling Commission's Scientific Committee concluded that "[t]he weight of accumulated evidence now associates mid-frequency, military sonar with atypical beaked mass strandings. This evidence is very convincing and appears overwhelming." *Id.*, Ex. 1, Annex K at 9.) A study sponsored by the Navy's own Office of Naval Research similarly concluded , "the evidence of sonar causation is, in our opinion, completely convincing and that therefore there is a serious issue of how best to avoid/ minimize future beaching events." *Id.*, Ex. 17 at 1 (concluding that a lack of understanding regarding the damage mechanism precluded modifications to the sonar

waveform as a mitigation strategy and proposing alternative mitigation measures).

Based on the studies establishing a scientific consensus on the correlation between the use of MFA sonar and mass whale strandings, the evidence indicating that MFA sonar disrupts activities critical to marine mammals' survival, such as food foraging and mating, and the conclusions of the Navy's own scientific study that the SOCAL exercises will cause 170,000 Level B harassment exposures and 466 permanent injuries to marine mammals, including five endangered species, the Court concluded that Plaintiffs had raised substantial questions as to whether the SOCAL exercises would have a significant impact on the environment. Plaintiffs therefore demonstrated a probability of success on their claim that their Navy's failure to prepare and environmental impact statement was arbitrary and capricious and in violation of NEPA and the APA.

The Court further found that Plaintiffs demonstrated a probability of success on their claims that Defendants' proposed mitigation measures were inadequate. An agency may avoid the requirement to prepare an EIS by adopting mitigation measures sufficient to eliminate any substantial questions over the potential for significant impact on the environment. *Nat'l Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 733-34 (9th Cir. 2001) ("In evaluating the sufficiency of mitigation measure , we consider whether they constitute an adequate buffer against the negative impacts that may result from the authorized activity. Specifically, we examine whether the mitigation measures will render such impacts so minor as to not warrant n EIS."). The Court

found that the mitigation measures proposed by Defendants were far from sufficient to obviate the need for an EIS. Ironically, Defendants actually reduced their mitigation efforts and adopted measures even less protective than those the Court had previously found insufficient. *See* CV 06-4131 FMC (FMOx), July 3, 2006, Temporary Restraining Order and July 5, 2006, Order Denying Defendant's *Ex Parte* Applications. The Navy has eliminated (1) its provisions requiring power-downs during surface ducting conditions (when sounds travels greater distances), at night and in other low-visibility conditions (when whales that would be affected are more difficult to see); (2) the twelve-nautical-mile coastal buffer zone, and (3) additional protection measures during "chokepoint" exercises.

What few mitigation measures remain continue to be ineffective. A "safety zone" of 1,000 yards, for example, does little to mitigate the impact of MFA sonar's effect on beaked whales where sound levels may not dissipate to sublethal levels for 5,000 meters. *See* Horowitz Decl., Ex 59 (acoustic energy map); Decl. of Linda Weilgart (noting mortality may occur at levels between 170-184 dB and as low as 150-155 dB; Decl. of Edward Parsons (Parsons Decl.) ¶ 17 (noting that sound can travel hundreds of miles under water). The presence of visual monitors looking for whales is likewise of little value where beaked whales, which are most susceptible to injury from MFA sonar, are regularly submerged in deep dives that last as long as sixty minutes. Parsons Decl. ¶ 10; Horowitz Decl., Ex. 44 (study finding a 5 percent chance under ideal conditions of observing the presence of beaked whales close to a vessel, and a 0 per-

cent chance of detecting a beaked whale at 1 kilometer using 7x binoculars).

The Court also found that Plaintiffs have demonstrated a probability of success on their claims that Defendants violated NEPA because their EA failed to consider reasonable alternative or cumulative impacts. The Ninth Circuit has concluded, in furtherance of NEPA's goal "that federal agencies infuse in project planning a thorough consideration of Environmental values," federal agencies most sufficiently study, develop, and describe alternatives as part of the "environmental decision making planning process." *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (internal quotations and citations are omitted). The environmental decision making process requires the Navy to give "full and meaningful consideration to reasonable alternatives. *Natural Res. Def. Council v. Evans*, 279 F. Supp. 2d 1165-66 (N.D. Cal. 2003); *see also Nat'l Parks & Conservation Ass'n*, 241 F.3d at 733 (". . . repeated generic statement that the effects are unknown does not constitute the requisite 'hard look' mandated by the statute if preparation of an EIS is to be avoided").

As the Ninth Circuit has explained:

> consideration of alternatives is critical to the goals of NEPA even where a proposed action does not trigger the EIS process. This is reflected in the structure of the statute: while an EIS must also include alternatives to the proposed action, 42 U.S.C. § 4332(2)(C)(iii) (1982), the consideration of alternatives requirement is contained in a separate subsection of the statute and therefore constitutes an independent requirement. *See id.* § 4332(2)(E). The lan-

> guage and effect of the two subsections also indicate that the language and effect of the two subsections also indicate that the consideration of alternatives requirement is of wider scope that the EIS requirement.

Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228-29 (9th Cir. 1988).

In addition, the Court found that it did not appear that Defendants adequately considered reasonable alternative mitigation measures, such as those proposed by the CCC, used by allies such as Australia during exercises employing MFA sonar, or even those the Navy itself employed during RIMPAC 2006. *See* Hajek Decl., Ex. 1 at 5-5 to 5-8 (succinctly dismissing ten proposals with little analysis and failing to discuss other alternatives). Defendants also failed to consider any geographical alternatives, and their conclusory single sentence argument that the SOCAL range is "uniquely situated to support these exercises" is insufficient to show that any alternatives would have been unreasonable, making consideration unnecessary. *'Ilio'Ulaokalani Coal v. Rumsfeld*, 464 F.3d 1083, 1100-01 (9th Cir. 2006) (holding that Army violated NEPA by filing to consider a location other than Hawaii for transformation of an army brigade despite stated strategic importance of area and evidence that action was "critical for the training of soldiers in conditions that would arise in expected combat situations.").

Finally, Defendants failed to adequately consider the cumulative impacts of the SOCAL exercises. Despite the EA's conclusion that the SOCAL exercises will cause 8,000 TTS exposures and 466 instances of perma-

nent injury, and evidence that the Navy regularly conducts unit level exercises using MFA sonar in the region, in one paragraph the EA dismissed the potential for cumulative impacts and concluded that the SOCAL exercises "would not have any significant contribution to the cumulative effects on marine mammals" based on the use of mitigation measures the Court has already found ineffectual. Although it is possible that the EA's findings could have been supported by further study and modeling incorporating the proposed mitigation measures, the EA's conclusion is unsupported by the assessment's current findings and model, and the failure to study and analyze the potential for such cumulate impacts in light of those findings renders the EA fatally inadequate. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 994 (9th Cir. 2004) ("A proper consideration of the cumulative impacts of a project requires some quantified or detailed information; general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided. The analysis must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects." (internal quotations and citations omitted)).

2. The Coastal Zone Management Act (CZMA)

In their initial motion, Plaintiffs contended that Secretary of the Navy Donald Winter and the United States department of the Navy (Navy Defendants) violated the CZMA by submitting a CD to the CCC for SOCAL exercises that did not take the planned use of MFA sonar into account and by failing to adopt the mitigation mea-

sures the CCC subsequently determined were necessary for the Navy's actions to comply with the CCMP. The CZMA requires that for the Navy's actions to comply within or outside the coastal zone that affects any land or water use or natural resources of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved state management programs." 16 U.S.C. § 1456(c)(1). Under the CZMA, agencies must comply with "the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the Federal agency." 15 C.F.R. § 930.32(a)(1). Agencies must also submit a CD "for all Federal agency activities affecting any coastal use or resource" to the applicable state agency. 15 C.F.R. § 930.34. Although the CZMA lacks a citizen suit provision, judicial review of the agency compliance is available pursuant to the APA. *See, e.g., Friends of Earth v. United States Navy*, 841 F.2d 927, 936 (9th Cir. 1988); 5 U.S.C. §§ 701-06. The burden of demonstrating maximum consistency practicable with the CCMP rests with the Navy. *California Coastal Comm'n v. United States*, 5 F. Supp. 2d 1106, 1112 (S.D. Cal. 1998).

The Navy Defendants argued that they were not required to analyze or discuss the proposed use of the MFA sonar in the CD they submitted to the CCC because of the MFA sonar in the CD they submitted to the CCC because the MFA sonar use would not affect any coastal resources. For the reasons that Defendant's determination that the SOCAL exercises would not have a significant impact on the environment was arbitrary and capricious, as discussed above, the court concluded that the Navy Defendants' determination that the use of

the MFA sonar in the SOCAL range would not affect any of California's coastal resources was similarly arbitrary and capricious and in violation of the APA.[5] The court also concluded that the mitigation measures developed by the Navy and the NMFS were "woefully inadequate and ineffectual . . . and Defendants have failed to establish that the CCC's proposed mitigation measures are either unnecessary or not required under the CCMP." Accordingly, the Court found that Plaintiffs have demonstrated a probability of succeeding on the merits of their claims under the CZMA.

B. Possibility of Irreparable Harm

The Court found that Plaintiffs have demonstrated that MFA sonar can injure and kill marine mammals, and cause population-affecting levels of disruption. Defendants' own study concludes that the SOCAL exercises in particular will cause widespread harm to nearly thirty species of marine mammals, including five species of endangered whales, and may cause permanent injury or death. Where, as here, plaintiffs demonstrate a strong likelihood of prevailing on the merits of their claims and there is a "possibility of irreparable harm," injunctive relief is appropriate. *Faith Ctr. Church Evangelistic Ministries v. Glover*, 480 F.3d 891, 906 (9th Cir. 2007); *Earth Island Inst. v. United States Forest Serv.*, 442 F.3d 1147, 1159 (9th Cir. 2006); *Cmty. House, Inc. v. City of Boise*, 468 F.3d 1118, 1123 (9th Cir. 2006). The Supreme Court has held that, "[e]nviromental injury, by its nature, can seldom be adequately remedied

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[5] The Navy Defendants raised a number of additional arguments in support of their decision under the CZMA, none of which the Court found persuasive. *See* August 2007 Order at 15-17.

by money damages and is often permanent or at least of long duration, *i.e.*, irreparable. If such injury is sufficiently likely, therefore, the balance of harms will usually favor the issuance of an injunction to protect the environment." *Amoco Prod. Co. v. Vill. of Gambell*, 480 U.S. 531, 545, 107 S. Ct. 1396, 94 L. Ed. 2d 542 (1987); *see also Save Our Sonoran, Inc. v. Flowers*, 408 F.3d 1113, 1125 (9th Cir. 2005).

From the numerous scientific studies, declarations, reports, and other evidence submitted to the Court, the Court continues to conclude that Plaintiffs have established to a near certainty that use of MFA sonar during the planned SOCAL exercises will cause irreparable harm to the environment and Plaintiffs' standing declarants. The Court is also satisfied that the balance of hardships tips in favor of granting an injunction, as the harm to the environment, Plaintiffs, and public interest outweighs the harm that Defendants would incur (or the public interest would suffer) if Defendants were prevented from using MFA sonar, absent the use of effective mitigation measures, during a subset of their regular activities in one part of one state for a limited period.

II. Injunctive Relief

The Ninth circuit panel agreed with the findings detailed above and with the conclusion that injunctive relief was warranted but remanded to this Court, stating that after "having considered the effect that narrowly tailored mitigation conditions might have on the parties' interests, we conclude that such an injunction would be appropriate." *Natural Res. Def. Council*, 2007 WL 3377229 at * 1. Accordingly, based on the evidence presently before it, the Court orders that the Navy im-

mediately implement the following mitigation measures.[6]

1. 12 Nautical Mile Coastal Exclusion Zone

The Navy shall maintain a 12 nautical mile exclusion zone from the California coastline at all times. The great weight of scientific evidence points to avoidance of marine mammal habitat as the most effective means of minimizing sonar-related injury to marine mammals. *E.g.*, Supplemental Decl. Robin William Baird ("Baird Supp'l Decl.") ¶¶ 5, 7-8; Supplemental Decl. Edward Parson ("Parsons Supp'l Decl.") ¶ 10; T. Agardy, *et al.*, *A Global Scientific Workshop on Spacio-Temporal Management of Noise: Report of the Scientific Workshop*, Pls.' Ex. 24. From the evidence presented to the Court in connection with the remand order, it appears

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[6] In response to the Ninth circuit's order, Plaintiffs proposed sweeping geographic exclusions, including: (1) a 25 nautical mile coastal exclusion, (2) exclusion of the Catalina Basin, (3) exclusion of the Westfall Seamount, (4) exclusion of the Cortez and Tanner Banks, and (5) locating exercise to the maximum extent possible in waters deeper than 1,500 meters. Defendants, by contrast, proposed to continue employing the mitigation measures outlined in the 2007 National Defense Exemption ("NDE II") as well as several additional measures, including: (1) powering down MFA sonar by 6 dB at 1,000 meters; powering down an additional 4 dB at 500 meters; and shutting off ("securing") MFA sonar at 200 meters; (2) employing two dedicated, and 3 non-dedicated, marine mammal lookouts at all times when MFA sonar is being used, and providing such lookouts with binoculars, night vision goggles, and infrared sensors; (3) staying outside the Channel Islands National Marine Sanctuary, and remaining 5 nautical miles from San Clemente Island's western shore, and 3 nm from its other shores; (4) aerial monitoring for at least 60 minutes before MFA sonar exercises along the Tanner and Cortez banks during blue whale migration (July to September 2008); and (5) pre-exercise monitoring of gray whale off-shore migration patterns during March 7-21, 2008 and April 15-May 15, 2008.

to the court that the exclusion of a 12 nautical mile zone adjacent to the coastline is both practicable and reasonably effective. The Navy adhered to a 25 nautical mile exclusion zone for its Rim of the Pacific (RIMPAC) exercises off the coast of Hawaii. Decl. Rear Admiral John M. Bird ¶ 46e (hereinafter "Bird Decl.). In addition, the Navy operated under a 2006 National Defense Exemption ("NDE I") that included a 12 nautical mile coastal exclusion zone. *Id.* Although the Court is cognizant of the high density of rich marine life within 25 nautical miles of the California coastline, it appears from the evidence before the Court that a coastal exclusion of that size would unduly hamper the Navy's training efforts. Accordingly, the Court deems the 12 nautical mile exclusion zone appropriate, in that the Navy has previously acknowledged its practicability and it would bar the use of MFA sonar in a significant portion of important marine animal habitat[7]

2. 2200 yard MFA Sonar Shutdown

The Navy shall cease use of MFA Sonar (either vessel-based or aircraft-based sonobouys or active dipping sonar) when marine mammals are spotted within 2200 yards (approximately 2000 meters). The Court is persuaded that the 1000 yard/500 yard/200 yard scheme proposed by the Navy is grossly inadequate to protect marine mammals from debilitating levels of sonar expo-

[7] The Court is likewise convinced that the 25 nautical mile exclusion zone proposed by Plaintiffs is impracticable, in that it would prevent the Navy from training top detect submarines in the very bathymetry in which submarines are likely to hide. Accordingly, the Court finds that the most practicable compromise is to allow the Navy to approach nearer to the shore, but to expand the range in which MFA sonar must be shut down to minimize the exposure of marine mammals.

sure. Bird Decl. ¶ 46f. A number of studies indicate that sonar injures marine mammals not only via acoustic harassment, but by panic-induced rapid diving or surfacing, which leads to decompression sickness (*i.e.*, "the bends"). *Compare* Bird Decl. ¶ 39 to Supplemental Decl. David E. Bain ¶ 7 (hereinafter "Bain Supp'l Decl.); Pls.' Supplemental Exs. 5, 6 (scientific articles detailing "acute embolic disease" and other bubble-induced sickness in marine mammals, caused by sound exposure); Parsons Decl. ¶ 5. Indeed, scientists have observed flight responses by marine mammals during naval exercises at distances as great as 22 kilometers (in the case of killer whales) or even 40 kilometers (Dall's porpoises). Bain Supp'l Decl. ¶¶ 12-13. The Court therefore is persuaded that while the 2200 yard shutdown requirement may protect marine mammals from the harshest of sonar-related consequences, it represents a minimal imposition of the Navy's training exercises.

3. Monitoring

a. Pre-Exercise Monitoring: Each day in which MFA sonar is to be used, the Navy shall monitor for the presence of marine mammals for 60 minutes before employing MFA sonar. If marine mammals are detected within 2200 yards, the Navy will wait until: (1) the marine mammals are seen to leave the vicinity, or (2) the MFA sonar-employing vessel has transited at least 2200 yards away from the marine mammals.

b. During the Exercise monitoring: The Navy will utilize two dedicated National Oceanic and Atmospheric Administration- and NMFS-trained lookouts at all times when MFA sonar is being used. *See* Parsons Supp'l Decl. ¶ 7 (describing dramatically greater mitigation

measure compliance when specialist marine mammal observers are present, as compared with ships' crew members). To the maximum extent practicable, the Navy will employ passive acoustic monitoring to supplement the visual detection of the presence of marine mammals. For example, in the San Clemente instrumented range (SCIRC), the Navy shall attempt to use its M3R acoustic monitoring system to monitor the presence of marine mammals. As beaked hales are close to impossible to detect visually, the employment of passive acoustic monitoring, *e.g.* by hydrophones, is the best means of detection and real-time avoidance of beaked whales. Decl. Robin William Baird ¶¶ 6-7 (explaining that detection of beaked whales approaches 0 percent at distances of 1 kilometer or greater and that beaked whales regularly dive for 50-60 minutes before surfacing); Baird Supp'l Decl. ¶¶ 5-6. Accordingly, the Navy shall employ such passive acoustic monitoring before and during MFA sonar use in areas where beaked whales are more likely to be present. *See* Jefferson Decl. ¶ 12 (noting that beaked whales are likely to be present at depths between 1000 meters and 2000 meters around the continental slope); Pls.' Ex. 11 (scientific study indicating that the area off the California coast west to 125.0°W is a key area for beaked whale populations).

c. Aerial Monitoring: The Court understands that the Navy deploys aircraft before and during its training exercises as part of its overall training scheme. Accordingly, the Court orders that the Navy shall use such aircraft, as well as at least one dedicated aircraft, to assist in the monitoring of the presence of marine mammals. Pre-aerial monitoring shall be conducted within

the 60 minutes before the start of use of MFA sonar. Aerial monitoring shall continue for the duration of exercises involving the use of MFA sonar. Any spotting of marine mammals will be communicated to vessels employing MFA sonar with all possible speed, to allow for timely compliance with the safety zone requirement detailed above.

4. Helicopter Dipping Sonar

In addition to aerial monitoring described above, helicopters shall monitor for marine mammals for 10 minutes before deployment of active dipping sonar. If marine mammals are spotted within the 2200 yard safety zone, all use of active dipping sonar shall cease until the helicopter has transited at least 2200 yards away from the marine mammals, or the mammals are seen to exit the safety zone.

5. Surface Ducting Conditions

Surface ducting, in which sound travels further that it otherwise would due to temperature differences in adjacent layers of water, are difficult to predict. Bird Decl. ¶ 52. In addition to making submarines difficult to detect, surface ducting causes the received decibel level of sound to be higher at greater distances then otherwise would be expected. *Id.* Although not predictable, when surface ducting conditions are detected, the Navy shall power down sonar by 6 dB.

6. Choke Points and the Catalina Basin

The parties disagree as to whether the Catalina basin between the Santa Catalina and San Clemente Islands constitutes a "choke point". The Navy insists that it is not a choke point because it is not "a strategic strait

or canal." Defs.' Mem. Regarding Tailored Preliminary Injunction at 11; Bird Decl. ¶ 54. Plaintiffs argue that it is at least a "simulated choke point," and that the Navy previously has referred to the area as such. Pls.' Opening Brief Regarding appropriate Mitigation Measures at 13 n.6; e.g., Pls.' Ex. 4 at 93, 136, 204, 239 (Navy Overseas Environmental Assessments describing use of the area as a "simulated straight."). In any event, the Court is satisfied that ingress and egress to the Catalina Basin is restricted, and that the area includes a high density of marine mammals. Baird Supp'l Decl. ¶ 8. Accordingly, the Court orders the Navy to refrain from employing MFA sonar in the Catalina Basin. The Court notes that this requirement is not intended to restrict activities within the San Clemente Island Range Complex (SCIRC), so long as MFA sonar is not employed closer than 5 nautical miles from the western shore of San Clemente Island, as represented in Defendants' papers. Defs.' Mem. at 10-11; Bird Decl. ¶¶ 59, 62.

7. Continue NDE II Mitigation Measures

The Navy shall continue to employ the mitigation measures listed in NDE II. To the extent that the requirements of this Order conflict with, or are stricter than, the NDE II mitigation measures, this Order controls.

CONCLUSION

IT IS SO ORDERED.

Dated: January 3, 2007

/s/ FLORENCE-MARIE COOPER
FLORENCE-MARIE COOPER, JUDGE

APPENDIX G

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 07-56157
D.C. No. CV-07-00335-FMC/FMO
Central District of California, Santa Ana

NATURAL RESOURCES DEFENSE COUNCIL, INC.; THE INTERNATIONAL FUND FOR ANIMAL WELFARE; CETACEAN SOCIETY INTERNATIONAL; LEAGUE FOR COASTAL PROTECTION; OCEAN FUTURES SOCIETY; JEAN-MICHEL COUSTEAU, PLAINTIFFS-APPELLEES

v.

DONALD C. WINTER, SECRETARY OF THE NAVY; UNITED STATES DEPARTMENT OF THE NAVY; CARLOS M. GUTIERREZ, SECRETARY OF THE DEPARTMENT OF COMMERCE; NATIONAL MARINE FISHERIES SERVICES; WILLIAM HOGARTH, ASSISTANT ADMINISTRATOR FOR FISHERIES OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION; CONRAD C. LAUTENBACHER, JR., ADMINISTRATOR OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION, DEFENDANTS-APPELLANTS

Nov. 13, 2007

Before: BETTY B. FLETCHER, DOROTHY W. NELSON, and STEPHEN REINHARDT, Circuit Judges.

ORDER

This appeal concerns the Navy's use of mid-frequency active sonar in fourteen training exercises off the coast of Southern California. The Navy completed three of these exercises in February and March of this year. On August 7, 2007, the district court entered a preliminary injunction prohibiting the Navy from using mid-frequency active sonar during the course of the eleven remaining exercises. On August 31, 2007, a motions panel of this court granted the Navy's motion to stay the preliminary injunction pending appeal. At oral argument held before this court on November 8, 2007, the Navy reported that since the stay was entered it has conducted one more exercise, and that an exercise currently underway would be completed by November 22, 2007. The Navy plans to conduct its next exercise in January 2008.

Plaintiffs have met the necessary burden of proof to demonstrate that some form of preliminary injunctive relief is appropriate. Specifically, Plaintiffs have shown a strong likelihood of success on the merits of their claims under the National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 et seq., and the Coastal Zone Management Act (CZMA), 16 U.S.C. § 1451 et seq., as well as the possibility of irreparable injury if relief is not granted. Plaintiffs have also shown that the balance of hardships tips in their favor if a properly tailored injunction is issued providing that the Navy's operations may proceed if conducted under circumstances that provide satisfactory safeguards for the protection of the environment. Moreover, the public interest would be ad-

vanced by an injunction that required adequate mitigation measures.

We agree with the motions panel that the "[t]he district court did not explain why a broad, absolute injunction against the use of the medium frequency active sonar in these complex training exercises for two years was necessary to avoid irreparable harm to the environment." *NRDC v. Winter*, 502 F.3d 859, 863-64 (9th Cir. 2007). Injunctive relief must be tailored to remedy the specific harm alleged, and an overbroad preliminary injunction is an abuse of discretion. *Lamb-Weston, Inc. v. McCain Foods, Ltd.*, 941 F.2d 970, 974 (9th Cir. 1991).

The motions panel was faced, however, with the all-or-nothing choice of staying the district court's blanket injunction pending our determination of this appeal, or denying the request for a stay entirely. The panel noted that "[w]e do not suggest whether an injunction allowing the exercises but subjecting them to mitigation measures might lead to a different result, because no such injunction is before us." *NRDC*, 502 F.3d at 864-65. Now that this matter has come to this court on its merits, we are able to consider whether remanding for a more tailored injunction would be an appropriate remedy.

Having heard arguments on that question and having considered the effect that narrowly tailored mitigation conditions might have on the parties' interests, we conclude that such an injunction would be appropriate. In light of the Navy's past use of additional mitigation measures to reduce the harmful effects of its active sonar during its 2006 exercises in the Pacific Rim, and of

the district court's longstanding involvement with this matter and its familiarity with the effectiveness and practicability of available mitigation measures, we vacate the stay and remand this matter to the district court to narrow its injunction so as to provide mitigation conditions under which the Navy may conduct its training exercises. The district court shall determine the appropriateness of whatever conditions may be suggested by either party, or may advance such conditions on its own.

So as to allow the Navy to complete the exercise that is currently in progress, the stay shall remain in effect until the end of the current exercise, or ten days from the date of this order, whichever is earlier. Once the stay is lifted, the preliminary injunction entered by the district court on August 7, 2007, shall take effect. The district court shall then conduct whatever hearings it deems reasonable or necessary, and enter an appropriate preliminary injunction by January 4, 2008, the earliest approximate date at which the Navy plans its next exercise. If the district court fails to modify the preliminary injunction so as to include mitigation measures by January 4, 2008, the Navy may make a motion before this panel for reinstatement of the stay order. This panel shall retain jurisdiction over any further motions, requests for relief, or appeals in this matter. An opinion will follow.

The stay is VACATED as of the time provided above, and the matter is REMANDED for the district court to enter a modified preliminary injunction containing appropriate mitigating conditions.

APPENDIX H

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 07-56157
D.C. No. CV-07-00335-FMC
Central District of California, Santa Ana

NATURAL RESOURCES DEFENSE COUNCIL, INC.; THE INTERNATIONAL FUND FOR ANIMAL WELFARE; CETACEAN SOCIETY INTERNATIONAL; LEAGUE FOR COASTAL PROTECTION; OCEAN FUTURES SOCIETY; JEAN-MICHEL COUSTEAU, PLAINTIFFS-APPELLEES

v.

DONALD C. WINTER, SECRETARY OF THE NAVY; UNITED STATES DEPARTMENT OF THE NAVY; CARLOS M. GUTIERREZ, SECRETARY OF THE DEPARTMENT OF COMMERCE; NATIONAL MARINE FISHERIES SERVICES; WILLIAM HOGARTH, ASSISTANT ADMINISTRATOR FOR FISHERIES OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION; CONRAD C. LAUTENBACHER, JR., ADMINISTRATOR OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION, DEFENDANTS-APPELLANTS

Aug. 31, 2007

Before: ANDREW J. KLEINFELD, CONSUELO M. CALLAHAN, and MILAN D. SMITH, Jr., Circuit Judges.

Opinion by Judge KLEINFELD; Dissent by Judge MILAN D. SMITH, JR.

OPINION AND ORDER

KLEINFELD, Circuit Judge:

The Navy and environmental advocacy organizations have battled for years about whether Navy training using sonar is too harmful to the environment, particularly whales. The Navy uses something called medium frequency active sonar, which basically bounces a loud noise off the hulls of extremely quiet submarines to detect their presence. The loud noise may be quite harmful to whales and other marine mammals. In a previous round of this litigation, the district court had approved a settlement that allowed Navy sonar training to proceed, but required mitigation measures. The measures consisted of such precautions as requiring some sailors to be on deck looking for whales, and reducing the decibel level when whales were present, weather prevented seeing whether any whales were around, or "surface ducting" would let the noise carry more.[1]

In this round of the litigation, the Navy proposed to use medium frequency active sonar in training exercises off the coast of Southern California without mitigation measures. The record does not show why the Navy does not propose the mitigation measures it has previously used. The district court issued a preliminary injunction under the National Environmental Policy Act[2] and the

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[1] *See NRDC v. Winter*, Settlement Agreement, CV-06-4131-FMC (C.D. Cal. July 7, 2006).

[2] 42 U.S.C. §§ 4321-4347.

Coastal Zone Management Act.[3] The injunction prohibits all use of medium frequency active sonar off the coast of Southern California during the fourteen large training exercises from 2007 to 2009.[4] The district court did not tailor the injunction in any way, such as by requiring the mitigation measures it had found sufficient before. The district court offers no more explanation of why the training could not be allowed to proceed with mitigation measures than the Navy does for why it does not want to commit itself to using mitigation measures. There is no explanation in the record for the breadth of the Navy's position or of the district court's injunction.

Medium frequency active sonar has proven to be the most effective method of detecting quiet-running diesel-electric submarines by emitting sound underwater at extreme pressure levels. The 2007 to 2009 exercises at issue were designed to train the full array of land, sea, undersea, and air components of the Pacific Fleet to perform successfully in complex, coordinated combat missions. An advocacy group, the Natural Resources Defense Council, and four other plaintiffs filed this action against the Navy, alleging that by finding no significant environmental impact after an environmental assessment, instead of preparing a full environmental impact statement, and by concluding that there was no effect on coastal resources, the Navy violated the National Environmental Policy Act,[5] the Endangered Spe-

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[3] 16 U.S.C. § 1451 et seq.

[4] *NRDC v. Winter*, Order, CV-07-00335-FMC at 20 (C.D. Cal. Aug. 7, 2007).

[5] 42 U.S.C. §§ 4321-4347.

cies Act,[6] the Administrative Procedures Act,[7] and the Coastal Zone Management Act.[8] Finding that the plaintiffs had demonstrated a high probability of success on the merits of all claims save the Endangered Species Act claim and a "near certainty" of irreparable harm to the environment, the district court enjoined the Navy from using medium frequency sonar during the fourteen challenged SOCAL training exercises.[9] The Navy filed an emergency motion for stay of the injunction pending appeal, which we grant.

[1] Two standards affect our determination, the standard applicable to district courts for preliminary injunctions, and the standard for appellate courts for stays pending appeal. The district court must apply a four part standard, or a sliding scale. What is critical to our review for abuse of discretion[10] is that the district court must consider not only the possibility of irreparable harm, but also, in appropriate cases, the public interest. The public interest is not the same thing as the hardship to the party against whom the injunction was issued. Balance of hardships is the third factor, and the public interest is the fourth factor. They are separate:

> Under the traditional test, a plaintiff must show: (1) a strong likelihood of success on the merits, (2) the possibility of irreparable injury to plaintiff if prelim-

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[6] 16 U.S.C. § 1536.

[7] 5 U.S.C. § 551 et seq.

[8] 16 U.S.C. § 1451 et seq.

[9] *NRDC v. Winter*, Order, CV-07-00335-FMC (C.D. Cal. Aug. 7, 2007).

[10] *See Sports Form, Inc. v. United Press Int'l, Inc.*, 686 F.2d 750, 752 (9th Cir. 1982).

> inary relief is not granted, (3) a *balance of hardships* favoring the plaintiff, and (4) advancement of the *public interest* (in certain cases). The alternative test requires that a plaintiff demonstrate either a combination of probable success on the merits and the possibility of irreparable injury or that serious questions are raised and the balance of hardships tips sharply in his favor. These two formulations represent two points on a sliding scale in which the required degree of irreparable harm increases as the probability of success decreases. They are not separate tests but rather outer reaches of a single continuum.[11]

The district court was required to consider, not only "balance of hardships" as between the plaintiffs and the Navy as an Executive Branch agency, but also the "public interest" in having a trained and effective Navy. We customarily give considerable deference to the Executive Branch's judgment regarding foreign policy and national defense.[12]

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[11] *Taylor v. Westly*, 488 F.3d 1197, 1200 (9th Cir. 2007) (emphasis added).

[12] *E.g., Dep't of Navy v. Egan*, 484 U.S. 518, 529 (1988) (noting that "unless Congress specifically has provided otherwise, courts traditionally have been reluctant to intrude upon the authority of the Executive in military and national security affairs."). The dissent argues that *Egan* was "not an environmental case" and that it relied heavily on "the President's authority as Commander in Chief." True, NEPA applies to the Navy, but that is not a distinction that makes a difference. There is no exception to the President's authority as Commander in Chief for environmental cases.

[2] The Supreme Court in *Hilton v. Braunskill*[13] articulated the similar standard appellate courts are required to apply for stays of civil judgments pending appeal.[14] This standard requires us to consider "where the public interest lies" separately from and in addition to "whether the applicant [for stay] will be irreparably injured absent a stay:"[15]

> The factors regulating issuance of a stay [include]: (1) whether the stay applicant has made a strong showing that he is likely to succeed on the merits; (2) *whether the applicant will be irreparably injured* absent a stay; (3) whether issuance of the stay will substantially injure the other parties interested in the proceeding; and (4) *where the public interest lies.*[16]

Hilton emphasizes that even "failing" a strong likelihood of success on the merits, the party seeking a stay may be entitled to prevail if it can demonstrate a "substantial case on the merits" and the second and fourth factors militate in its favor.[17] The district court did not

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[13] *Hilton v. Braunskill*, 481 U.S. 770 (1987).

[14] The dissent accurately notes that *Hilton* involved a stay of a writ of habeas corpus, but erroneously argues that the *Hilton* standard would therefore not apply to an environmental case. The Court in *Hilton* says that it is using "the traditional standards governing stays of civil judgments" to interpret the rules for stays of writs of habeas corpus, *id.* at 774 and "the factors regulating the issuance of a stay are generally the same," *id.* at 776. That leaves no room for the dissent's position that they are not "generally the same" or that, as the dissent says, "*Hilton* does not apply here."

[15] *Id.* at 776.

[16] *Id.* (emphasis added); *see* Fed. R. Civ. P. 62(c); Fed. R. App. P. 8(a).

[17] *Hilton v. Braunskill*, 481 U.S. 770, 778 (1987).

give serious consideration to the public interest factor. All our dissenting colleague can come up with is an oblique reference in the oral discussion preceding the order. All the order contains is a conclusory remark about "the harm the Defendants will suffer." That is the third factor, not the fourth. There is not a word in the order about the interest of the public, as distinguished from the interest of the Navy, in war preparedness:[18]

> The Court is also satisfied that the balance of hardships tips in favor of granting an injunction, as the harm to the environment, Plaintiffs, and public interest outweighs the harm that Defendants would incur if prevented from using MFA sonar, absent the use of effective mitigation measures, during a subset of their regular activities in one part of one state for a limited period.[19]

The reference to "public interest" by the district court extends only to the interest in protecting marine mammals, especially beaked whales, not the interest in national defense.

[3] The public does indeed have a very considerable interest in preserving our natural environment and especially relatively scarce whales.[20] But it also has an interest in national defense. We are currently engaged in war, in two countries. There are no guarantees extending from 2007 to 2009 or at any other time against

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[18] We reviewed classified documents submitted by the Navy to the district court and considered them in coming to our decision.

[19] *NRDC v. Winter*, Order, CV-07-00835-FMC at 19 (C.D. Cal. Aug. 7, 2007).

[20] The main argument of the dissent is that NEPA applies to the Navy. We do not disagree.

other countries deciding to engage us, or our determining that it is necessary to engage other countries. The safety of the whales must be weighed, and so must the safety of our warriors. And of our country.

Our dissenting colleague also argues that "the Navy is free to proceed at any time with its MFA sonar training exercises *outside* the SOCAL area that are similar to conditions in the SOCAL area." The environmental assessment,[21] though, explains that "this particular location" matters.[22] According to that document, "[t]here is no duplicative location where land, sea, undersea and airspace assets are controlled by military authorities that allow full play and training by THIRD Fleet operational actors."[23] The environmental assessment further explains that none of the potential alternative locations, including Alaska and Hawaii, "provide the full complement of range infrastructure necessary to conduct typical, realistic, coordinated COMPTUEX and JTFEX training."[24] Although one-time training operations have been conducted off Alaska and Hawaii, the environmental assessment says that "routine usage of these training areas for the major exercises is infeasible."[25] Because the record offers no support for it, we respectfully disagree with our dissenting colleague's

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[21] United States Navy, Composite Training Unit Exercises and Joint Task Force Exercises, Environmental Assessment/Overseas Environmental Assessment, Final, *available at* http://www.navydocuments.com/documents/COMPTUEX-JTFEX%20EA-OEA.pdf (February 2007) (last visited Aug. 29, 2007).

[22] *Id.* at 2-32.

[23] *Id.*

[24] *Id.* at 2-33.

[25] *Id.*

implication that the Navy ought to do whatever it needs to do someplace other than off the coast of Southern California.

[4] The district court did not explain why a broad, absolute injunction against the use of the medium frequency active sonar in these complex training exercises for two years was necessary to avoid irreparable harm to the environment. The district court's previous approval of similar exercises subject to mitigation measures requires some explanation, which we cannot find in the order granting the injunction, for why that is no longer sufficient. Nor does the Navy explain why it no longer proposes to use these mitigation measures, a factor that militates against its probability of full success on the merits in district court. On appeal, though, because of the breadth of the injunction, and the district court's failure to consider the fourth factor, the Navy's probability of at least partial success on the merits is high. At the least, the Navy presents a "substantial"[26] case on appeal, and the "second and fourth factors"[27] militate in its favor. Applying independently on appeal our duty under *Hilton*[28] to consider the fourth factor, the public interest, we are obligated to grant a stay pending appeal of the preliminary injunction.

Our conclusion is limited to what is before us, a district court injunction absolutely prohibiting the Navy's use of medium frequency active sonar in its training program rather than tailoring the injunction with mitigation measures. We do not suggest whether an injunc-

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[26] *See Hilton v. Braunskill*, 481 U.S. 770, 778 (1987).

[27] *See id.*

[28] *Id.* at 776.

tion allowing the exercises but subjecting them to mitigation measures might lead to a different result, because no such injunction is before us. The environmental assessment says that there would be no significant environmental impact if the Navy used lookouts for marine mammals, made binoculars available to the lookouts, and reduced the noise during "surface ducting" conditions or when it was so foggy that the lookouts would not be able to see marine mammals.

Expeditious determination of this appeal can eliminate a great deal of the risk to both our country and to marine wildlife. Accordingly, we order expedited briefing and calendaring of this appeal. The provisions of Ninth Circuit rule 31-2.2(a) shall not apply to this appeal. A briefing schedule is set out in a separate order. Any motions to extend time to file the briefs will be strongly disfavored.

The Navy's emergency motion to stay the preliminary injunction entered by the district court on August 7, 2007 is GRANTED.[29]

MILAN D. SMITH, JR., Circuit Judge, dissenting in part and concurring in part.

I respectfully dissent to the granting of a stay of the district court's preliminary injunction. The district court did not abuse its discretion when it issued a preliminary injunction against the Navy's use of MFA so-

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[29] Natural Resources Defense Council's motion to strike the "Unclassified Declaration Addendum of David Yoshihara," submitted by Defendants-Appellants with their reply brief, is GRANTED, because it contains new evidence not presented to the district court. *See* Fed. R. App. P. 10(a). All other motions are referred for consideration to the merits panel.

nar during certain planned exercises in the SOCAL range through January 2009.

The Navy has not shown a probability of success on the merits of this case or raised serious questions about the merits. In weighing the possibility of irreparable injury, balancing hardships, and determining where the public interest lies, the district court carefully considered and weighed the national security and public interest issues presented by this case. Until very recently, the Navy employed some environmental mitigation measures it now rejects in the name of national security. Moreover, the Navy has the ability to continue training its personnel in the use of MFA sonar technology pending the outcome of the merits of this case by conducting MFA sonar exercises *outside* the SOCAL range. In fact, the district court received evidence that the Navy is testing MFA sonar technology "all over the world all the time." It is the Navy's sharp starboard tack from its recent training practices that has left it in irons fighting environmental laws, not a failure by the district court to consider national security or the public interest.

On appeal, we review the issuance of a preliminary injunction for abuse of discretion. *Ashcroft v. ACLU*, 542 U.S. 656, 664 (2004). Under the abuse of discretion standard, a reviewing court cannot reverse absent "a definite and firm conviction that the district court committed a clear error of judgment in the conclusion it reached upon weighing of the relevant factors." *SEC v. Coldicutt*, 258 F.3d 939, 941 (9th Cir. 2001).

The standard for determining whether to grant a stay pending appeal is similar to that applied by a district court when considering the issuance of a prelimin-

ary injunction. *Tribal Vill. of Akutan v. Hodel*, 859 F.2d 662, 663 (9th Cir. 1988). A preliminary injunction may be issued when the moving party demonstrates "either: (1) a likelihood of success on the merits and the possibility of irreparable injury; or (2) that serious questions going to the merits were raised and the balance of hardships tips sharply in [the moving party's] favor." *Lands Council v. Martin*, 479 F.3d 636, 639 (9th Cir. 2007) (*quoting Clear Channel Outdoor Inc. v. City of Los Angeles*, 340 F.3d 810, 813 (9th Cir. 2003)).

As noted by the majority, we are also required to consider "where the public interest lies" in certain cases. *Hilton v. Braunskill*, 481 U.S. 770, 776 (1987); *Taylor v. Westly*, 488 F.3d 1197, 1200 (9th Cir. 2007). I respectfully differ with the majority, however, concerning how the "public interest" consideration applies in this case. *Department of Navy v. Egan*, 484 U.S. 518 (1988), cited by the majority for the proposition that "unless Congress specifically has provided otherwise, courts traditionally have been reluctant to intrude upon the authority of the Executive in military and national security matters," is distinguishable from the facts of this case. Egan involved the discharge of a Navy employee whose security clearance had been denied; it was not an environmental case. *Id.* at 522. The Supreme Court held that the authority to classify and control access to information bearing on national security and to determine which individuals have the right to access such information flows from the President's authority as Commander in Chief and exists apart from any explicit congressional grant. *Id.* at 527. It also noted a "'compelling interest' in withholding national security information from unauthorized persons in the course of exec-

utive business." *Id.* But "public interest" considerations in environmental cases are very different from those in security clearance cases, and the military has long been required to comply with NEPA and numerous other environmental laws, *even though national security considerations have been involved. See, e.g., San Luis Obispo Mothers for Peace v. Nuclear Regulatory Commission*, 449 F.3d 1016, 1035 (9th Cir. 2006), and cases cited therein.

The majority also cites *Hilton v. Braunskill*, 481 U.S. 770 (1987), for the proposition that even "'failing' a strong likelihood of success on the merits, the party seeking a stay may be entitled to prevail if it can demonstrate a 'substantial case on the merits' and the second and fourth factors militate in its favor." But *Hilton* was a habeas corpus case, not an environmental case, and deals with the standards for releasing a prisoner from confinement pending appeal. *Id.* at 775-76. The "public interest" considered in *Hilton* was whether the lower court could properly take the dangerousness of the habeas petitioner into account as part of its decision whether to release the petitioner pending appeal. *Id.* at 777. The court concluded that the court may do so, despite the traditional preference for release. *Id.* at 778. The "public interest" in this case is very different and constitutes a weighing between the "national security" public interest advocated by the Navy versus the environmental "public interest" advocated by the Appellees. *Hilton* does not, in my view, permit this court to decline to consider the requirement that the Navy show a probability of success on the merits in order to grant a stay of the district court's injunction.

1. The Navy fails to meet its burden of showing probability of success on the merits and fails to raise serious questions going to the merits of this case. Although Congress could easily include a national security exemption in the National Environmental Policy Act ("NEPA"), 42 U.S.C. §§ 4321-4347, it has not done so. As we stated in *San Luis Obispo Mothers for Peace*, 449 F.3d at 1035, "[t]here is no 'national defense' exception to NEPA. . . . The Navy, just like any federal agency, must carry out its NEPA mandate to the fullest extent possible and this mandate includes weighing the environmental costs of the [project] *even though the project has serious security implications.*" *Id.* (*quoting No GWEN Alliance v. Aldridge*, 855 F.2d 1380, 1384 (9th Cir. 1988)) (internal quotation marks omitted) (emphasis added). The Navy's Environmental Assessment ("EA") reports that the planned SOCAL exercises may result in approximately 170,000 "takes" of marine mammals and, according to the district court's order, may include "approximately 8,000 exposures powerful enough to cause a temporary threshold shift in the affected mammals' sense of hearing and an additional 466 instances of permanent injury to beaked and ziphiid whales." Our holding in *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208 (9th Cir. 1998), instructs that in order for the plaintiffs to prevail on a claim that the Navy must prepare an Environmental Impact Statement ("EIS") for the SOCAL exercises, "a plaintiff need not show that significant effects will in fact occur. It is enough for the plaintiff to raise substantial questions whether a project may have a significant effect on the environment." *Id.* at 1212 (internal quotation marks and citations omitted). The district

court found that the Navy's EA and other evidence had shown to a "near certainty that the use of MFA sonar during planned SOCAL exercises will cause irreparable harm to the environment and to plaintiffs' declarants." Accordingly, it appears at this stage of the proceedings that the Navy will have to prepare an EIS before it engages in its training exercises within the SOCAL area. 42 U.S.C. § 4332(2)(C); *Native Ecosystems Council v. United States Forest Serv.*, 428 F.3d 1233, 1239 (9th Cir. 2005). The Navy has not yet prepared an EIS, and it has not yet offered any legally viable defense to the EIS preparation requirement.

Similarly, the Navy failed to submit its sonar activities for a consistency determination to the California Coastal Commission ("CCC") as required by the Coastal Zone Management Act ("CZMA"), 16 U.S.C. § 1456(c)(1), and then refused to comply with the Commission's proposed mitigating measures, some of which are the same mitigation measures employed by the Navy from mid-2006 to January of 2007. As with NEPA, the Congress created no national security exemption to the CZMA, and the Navy appears to be in violation of the CZMA. *See id.* The Navy has not yet offered any legally viable defense to its failure to comply with CZMA.

Accordingly, the Navy has not met its burden of showing probability of success on the merits and fails to raise serious questions going to the merits of this case. The majority does not address this required prong of the test the Navy must meet in order to obtain a stay. *Hilton* does not apply here, but even if it did, the Navy

still cannot meet its burden to show that it has a "substantial case on the merits," as *Hilton* requires.

2. The Navy also fails to show that it will suffer irreparable harm if the stay is not granted or that the balance of hardships tips sharply in its favor. It also fails to make the case for a compelling public interest that overrides the Navy's probable violations of NEPA and CZMA. From mid-2006 to January of 2007, the Navy used a set of environmental mitigation measures for all MFA sonar exercises other than RIMPAC. It adopted similar measures when it conducted MFA sonar exercises as part of the 2006 RIMPAC near Hawaii, and added additional protections for planned chokepoint and isobath exercises. From mid-2006 to January of 2007, the Navy did not operate MFA sonar within twelve nautical miles of the coast. From mid-2006 to January of 2007, the Navy enlarged the safety zone for marine mammals when certain significant surface ducting conditions existed. From mid-2006 to January of 2007, the Navy followed certain procedures during low visibility conditions, whereby if detection of a marine mammal was not possible out to the prescribed safety zone, the Navy would power down sonar if marine mammals were present in the zones it could not use. From mid-2006 to approximately January of 2007, the Navy provided focused monitoring for mammals before, during and after chokepoint exercises.

And yet, commencing some time in early 2007, without providing convincing (or in some cases, any) evidence compelling its change in policy, the Navy has declined to continue employing the referenced environmental mitigation measures it used from mid 2006 to

January of 2007, let alone been willing to adopt the further measures sought by the CCC, that would likely have permitted it to conduct exercises in the SOCAL range.

There is no "national security trump card" that allows the Navy to ignore NEPA to achieve other objectives. By declining to write a national security exemption into NEPA, Congress has evidently concluded that it does not jeopardize national security to require the military to comply with NEPA, and the courts have agreed. *See e.g., San Luis Obispo Mothers for Peace,* 449 F.3d at 1035. Moreover, unless someone can demonstrate that the Navy jeopardized our national security and failed to properly train our involved military personnel by adopting the referenced environmental mitigation measures during the period from mid-2006 to January 2007, it is hard to imagine why implementing some of those same environmental mitigation measures now would do so, especially if doing so would open the possibility of training within the SOCAL range.

3. As further evidence that neither the Navy nor national security will suffer irreparable harm or that the public interest will be harmed by leaving the district court's preliminary injunction in place *pendente lite,* the Navy has already completed three of its fourteen planned SOCAL exercises scheduled from February 2007 to January 2009. Even more importantly, given the limited language and scope of the injunction, the Navy is free to proceed at any time with its MFA sonar training exercises *outside* the SOCAL area that are similar to the conditions in the SOCAL area. The majority says this is unpersuasive because the Navy claims

"there is no duplicative location where land, sea, undersea and airspace assets are controlled by military authorities that allow full play and training by THIRD Fleet operational actors." But the district court already considered this contention by the Navy and found as follows at the hearing for the preliminary injunction:

> What is not clear from the papers nor was it ever fully addressed in the question of the Hawaii exercises is the fact that this is not the only place in the world where this kind of testing can go on.
>
> . . .
>
> *There is nothing before me to indicate there are not other places in the world where this testing could go on.* And, in fact, in the larger lawsuit, the court has evidence that, in fact, testing is going on all over the world all the time. (emphasis added).

In making these findings, the district court considered the same classified documentation we did, as well as a far more extensive set of documents and studies. We traditionally defer to the findings of the district court concerning matters of fact. This should particularly be true here where much of the counter documentation of the appellees is not before us as it was before the district court.

4. Unlike my colleagues in the majority, I am satisfied that the district court carefully weighed national security and public interest considerations before issuing the preliminary injunction in this case. The record shows that the district court reviewed certain documentation pertaining to national security matters in camera prior to issuing its injunction. The court transcript also

shows clearly that the court carefully considered national security interests before issuing its injunction.

> Well, let [me] say *it is clear from your papers and from everything that I have read that the MFA active sonar testing is important. It's critical to national security.* I have absolutely no problem with that concept or the reality of it.
>
> What is not clear from the papers nor was it ever fully addressed in the question of the Hawaii exercises is the fact that this is not the only place in the world where this kind of testing can go on.
>
> . . .
>
> There is nothing before me to indicate there are not other places in the world where this testing could go on. And, in fact, in the larger lawsuit, the court has evidence that, in fact, testing is going on all over the world all the time.
>
> *So while I recognize the significance of saying these fourteen exercises cannot be conducted the way they've been proposed, which is with little or no mitigation, it does not mean that there will be no active MFA sonar testing for our Navy.* That's not the result here.
>
> . . .
>
> *The issues are tremendously important, and it's never easy to balance something as significant as safety to wildlife with issues that may hinge on national security and injury or harm to the Navy.*
>
> I remain satisfied that the plaintiffs have established to a near certainty that the use of MFA sonar during

> planned SOCAL exercises will cause irreparable harm to the environment and to plaintiffs' declarants.
>
> *The court is satisfied the balance of hardships tips in favor of granting the injunction as harm to the environment, plaintiffs, and the public interest outweighs harm to the defendants if they were prevented from using MFA sonar in Southern California during these exercises without effective mitigation measures.*

(emphasis added).

In light of the district court's actions and statements, I find no abuse of discretion merely because the words "national security" do not appear in the district court's order granting the injunction. I also respectfully note that it is the Navy that has rejected mitigation measures, not the district court or the plaintiffs.

The district court did not abuse its discretion in handing down its preliminary injunction, and I respectfully dissent.

I do concur with the majority that this case should be heard by a merits panel of our court at the earliest possible date. I also concur in the granting of plaintiff's motion to strike the "Unclassified Declaration Addendum of David Yoshira [*sic*]."

APPENDIX I

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

No. 8:07-cv-00335-FMC-FMOx

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Aug. 7, 2007

ORDER DENYING DEFENDANTS' MOTION TO DISMISS OR STAY AND GRANTING IN PART AND DENYING IN PART PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

FLORENCE-MARIE COOPER, Judge.

This matter is before the Court on Defendants' Motion to Dismiss or Stay (docket no. 14) and Plaintiffs' Motion for Preliminary Injunction (docket no. 21), filed June 22, 2007. The Court has read and considered the moving, opposition, and reply documents submitted in connection with these motions. The matter was heard on August 6, 2007, at which time the parties were in receipt of the Court's Tentative Order. For the reasons and in the manner set forth below, the Court hereby **GRANTS IN PART AND DENIES IN PART** Plaintiffs'

Motion for Preliminary Injunction and DENIES Defendants' Motion to Dismiss or Stay.

FACTUAL BACKGROUND AND PROCEDURAL HISTORY

This litigation arises out of the United States Navy's proposed use of mid-frequency active (MFA) sonar, a tool that has proven far more effective at detecting modern quiet-running diesel electric submarines than passive sonar. (Decl. of Capt. Martin May (May Decl.) ¶¶ 8-10.) MFA sonar, which generates underwater sound at extreme pressure levels, has the unfortunate side effect of harming marine life, up to and including causing death. (*See, e.g., Decl. of Thomas Jefferson* (*Jefferson* Decl.) ¶ 4 and sources cited therein.) The Navy plans to use MFA sonar during fourteen large-scale training exercises (involving various ships, submarines, amphibious vehicles, rotary and fixed-wing aircraft, and live ordinance) off the coast of southern California between February 2007 and January 2009. (Decl. of Luther Hajek (Hajek Decl.), Ex. 1 at 2-1 to 2-24.) The Navy's own Environmental Assessment (EA) reports that these activities, comprised of Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Exercises (JTFEX), will result in approximately 170,000 "takes"[1] of marine mammals. (*Id.* at 4-46 to 4-47.) These takes are predominantly "Level B harassment exposures," in which marine mammals would be subjected to sound lev-

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[1] The term "take," as defined in the Endangered Species Act, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." 16 U.S.C. § 15632(19).

els of between 170 and 195 decibels,[2] but also include approximately 8,000 exposures powerful enough to cause a temporary threshold shift in the affected mammals' sense of hearing and an additional 466 instances of permanent injury to beaked and ziphiid whales. (*Id.*)

Despite these findings, the Navy concluded that its JTFEX and COMPTUEX exercises in the Southern California Operating Area (SOCAL) would not cause a significant impact on the environment and on that basis decided that the National Environmental Policy Act (NEPA) did not require it to prepare an Environmental Impact Statement (EIS). In addition, the Navy determined that the use of MFA sonar would not affect natural resources in California's coastal zone and therefore submitted a "consistency determination" (CD) to the California Coastal Commission (CCC) for the exercises that did not take the planned use of MFA sonar into account. It also refused to adopt the mitigation measures the CCC subsequently determined were necessary for the Navy's actions to comply with the California Coastal Management Program (CCMP). (*See* Decl. of Cara Horowitz (Horowitz Decl.), Ex. 67 at 9.)

On March 22, 2007, Plaintiffs, five environmental protection groups and Jean-Michel Cousteau, filed this action against Defendants, which include the United States Department of the Navy and the National Marine Fisheries Service (NMFS), seeking declaratory and injunctive relief for Defendant' violations of NEPA, the

[2] Decibels are a logarithmic measurement, such that an increase of 10 dB is equivalent to a tenfold increase in acoustic energy. To put these sound levels in perspective, OSHA requires hearing protection to be used where workers are exposed to a sound level of 90 dB for eight hours or 110 dB for as little as thirty minutes. 29 C.F.R. § 1910.95(a).

Endangered Species Act (ESA), the Administrative Procedures Act (APA), and the Coastal Zone Management Act (CZMA). On June 22, 2007, Plaintiffs moved for a preliminary injunction enjoining the Navy's use of MFA sonar during the SOCAL exercises "until the Navy adopts mitigation measures that would substantially lessen the likelihood of serious injury and death to marine life." That same day, Defendants filed a Motion to Dismiss or Stay.

DISCUSSION

I. Defendants' Motion to Dismiss or Stay

Defendants have asked the Court, "for purposes of judicial economy," to exercise its inherent power to manage its docket by dismissing this action, which it argues is duplicative of *Natural Res. Def. Council v. Winter,* CV 05-7513 FMC (FMOx) (hereinafter *NRDC I*), or staying the action pending resolution of *NRDC I* and *California Coastal Comm'n v. U.S. Dep't of the Navy,* CV 07-1899 FMC (FMOx). The Court finds that the instant case does not constitute "vexatious litigation," as Defendants argue, and declines to exercise its broad discretion in the service of judicial economy by dismissing or staying this subsequently filed action that involves additional parties, asserts new legal claims, and is premised on new factual developments, particularly where a dismissal or stay would likely preclude any review of the claims on their merits until after completion of the challenged activities, which Plaintiffs contend will cause irreparable harm. Accordingly, the Court denies Defendants' Motion to Dismiss or Stay.

II. Plaintiffs' Motion for Preliminary Injunction

Plaintiffs have asked the Court to issue a preliminary injunction prohibiting the Navy from using MFA sonar during the remaining eleven SOCAL exercises. "A preliminary injunction may issue when the moving party demonstrates either '(1) a combination of probable success on the merits and the possibility of irreparable harm; or (2) that serious questions are raised and the balance of hardships tips in its favor.'" *Faith Ctr. Church Evangelistic Ministries v. Glover*, 480 F.3d 891, 906 (9th Cir. 2007) (quoting *A & M Records v. Napster, Inc.*, 239 F.3d 1004, 1013 (9th Cir. 2001)); *see also Cmty. House, Inc. v. City of Boise*, 468 F.3d 1118, 1123 (9th Cir. 2006). "These two options represent extremes on a single continuum: 'the less certain the district court is of the likelihood of success on the merits, the more plaintiffs must convince the district court that the public interest and balance of hardships tip in their favor.'" *Lands Council v. Martin*, 479 F.3d 636, 639 (9th Cir. 2007) (quoting *Sw. Voter Registration Educ. Project v. Shelley*, 344 F.3d 914, 918 (9th Cir. 2003) (en banc) (per curiam); *see also A & M Records*, 109 F.3d at 1013 (criteria form a "sliding scale" whereby the required degree of harm increases as the likelihood of success decreases); *United States v. Nutri-Cology, Inc.*, 982 F.2d 394, 398 (9th Cir. 1992) (same).

A. Probability of Success on the Merits

Plaintiffs allege that Defendants (1) failed to prepare a required EIS, (2) failed to prepare an adequate Environmental Assessment, (3) failed to submit a consistency determination that included all federal activities that would affect California's coastal zone to the CCC

for consistency review, (4) failed to carry out federal activities that affect California's costal zone in a manner consistent with the CCMP, and (5) failed to prepare an adequate Biological Opinion (BiOp) and Incidental Take Statement (ITS). Having reviewed the voluminous evidence the parties have presented, the Court finds that Plaintiffs have demonstrated a probability of success on the merits of their first four causes of action, for violations of NEPA, the APA, and the CZMA, but not their fifth cause of action, for violation of the ESA.

1. The National Environmental Policy Act (NEPA)

Plaintiffs contend that Defendants violated NEPA by (a) failing to prepare an EIS despite the potential for the challenged exercises to have a significant impact on the environment and (b) by failing to prepare an adequate EA that considered the cumulative impacts of, and all reasonable alternatives to, the proposed actions.

In 1970, Congress passed the National Environmental Policy Act and declared "a national policy which will encourage productive and enjoyable harmony between man and his environment." 42 U.S.C. § 4321. The purpose of NEPA was "to promote efforts which will prevent or eliminate damage to the environment," as well as "to enrich the understanding of the ecological systems and natural resources important to the Nation." *Id.* NEPA does not contain any substantive requirements that dictate a particular result; instead, NEPA is aimed at ensuring agencies make *informed* decisions and "contemplate the environmental impacts of [their] actions." *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1149 (9th Cir. 1998); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349, 104 L. Ed. 2d 351,

109 S. Ct. 1835 (1989) (concluding that NEPA "ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.").

In addition to aiding internal agency decisionmaking, preparation and publication of an EIS "also serves a larger informational role. It gives the public the assurance that the agency has indeed considered environmental concerns in its decisionmaking process, and, perhaps more significantly, provides a springboard for public comment." *Robertson*, 490 U.S. at 349 (internal quotations and citations omitted).

In pursuit of these goals, NEPA mandates the preparation of an EIS for all proposed "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). The Ninth Circuit has interpreted this provision as requiring agencies to prepare an EIS "where there are substantial questions about whether a project *may* cause significant degradation of the human environment." *Native Ecosystems Council v. United States Forest Serv.*, 428 F.3d 1233, 1239 (9th Cir. 2005) (emphasis in original). As the preparation of an EIS can be a costly and time-consuming process, agencies first complete an EA. 40 C.F.R. § 1508.9. If, based on this assessment, the agency concludes that the proposed actions will not significantly affect the environment, it may issue a "Finding of No Significant Impact" (FONSI) and forego completion of an

EIS. *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1225 (9th Cir. 1988); 40 C.F.R. § 1508.13. Agencies must complete an EA and, as necessary, an EIS before reaching a final decision or making an "irreversible and irretrievable commitment of the availability of resources." *Environmental Defense Fund, Inc. v. Andrus*, 596 F.2d 848, 852 (9th Cir. 1979).

Defendants insist that they were not required to prepare an EIS, and that their issuance of a FONSI was proper, because the SOCAL exercises will not cause a significant impact on marine life. In the Ninth Circuit, courts reviewing an agency's decision not to prepare an EIS under NEPA "employ an arbitrary and capricious standard that requires [them] to determine whether the agency has taken a 'hard look' at the consequences of its actions, based its decision on a consideration of the relevant factors, and provided a convincing statement of reasons to explain why a project's impacts are insignificant." *Native Ecosystems Council v. U.S. Forest Service*, 428 F.3d 1233, 1239 (9th Cir. 2005) (internal quotations and citations omitted). To prevail on a claim that an agency "violated its statutory duty to prepare an EIS, a plaintiff need not show that significant effects will in fact occur. It is enough for the plaintiff to raise substantial questions whether a project may have a significant effect on the environment." *Blue Mts. Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1212 (9th Cir. 1998) (internal quotations and citations omitted).

The Court finds that Plaintiffs have raised substantial questions as to whether the SOCAL exercises will have a significant impact on the environment. Mass strandings of several species of whales following naval

exercises have been documented in the Bahamas, the Canary Islands, Hawaii, North Carolina, Japan, Greece, Spain, Taiwan, the Madeira archipelago, and the U.S. Virgin Islands. (*See generally,* Horowitz Decl. Exs. 1-16.) Following comprehensive studies of these events, the International Whaling Commission's Scientific Committee concluded that "[t]he weight of accumulated evidence now associates mid-frequency, military sonar with atypical beaked whale mass strandings. This evidence is very convincing and appears overwhelming." (Horowitz Decl, Ex. 1, Annex K at 9.) A study sponsored by the Navy's own Office of Naval Research similarly concluded, "the evidence of sonar causation is, in our opinion, completely convincing and that therefore there is a serious issue of how best to avoid/minimize future beaching events." (Horowitz Decl., Ex. 17 at 1 (concluding that a lack of understanding regarding the damage mechanism precluded modifications to the sonar waveform as a mitigation strategy and proposing alternative mitigation measures).)

Defendants argue that the circumstances in each of these numerous other stranding events are unique and distinguishable from what will occur in southern California. Defendants note that they have been conducting naval exercises while using MFA sonar in the SOCAL range for thirty years and that there have been no strandings "alleged to be related to the Navy's use of MFA sonar," and that it simply "defies reason to argue that there have been adverse impacts that have gone unnoticed all that time." The Court disagrees.

First, in light of how challenging it is to detect even the presence of deep diving beaked whales and other

cetaceans particularly vulnerable to MFA sonar, a lack of documented evidence of the disturbance, injury, or even death of marine mammals in a particular geographic area does little to prove that MFA sonar never caused such adverse effects. Indeed, in its 2006 U.S. Pacific Marine Mammal Stock Assessment, the National Oceanic and Atmospheric Administration (NOAA) noted in its discussion of mortalities caused by anthropogenic noise, such as MFA sonar, that "[s]uch injuries or mortalities would *rarely be documented,* due to the remote nature of many of these activities and the low probability that an injured or dead beaked whale would strand." (Horowitz Decl., Ex 46 at 151 (emphasis added).)

Second, the Navy's own EA predicts that the SOCAL exercises will disturb or injure nearly thirty species of marine mammals, including endangered and threatened species. As discussed above, the Navy's report concludes that its actions will result in approximately 170,000 instances of Level B harassment, including 8,000 temporary threshold shift (TTS) exposures and 466 cases of permanent injury to beaked and ziphiid whales. (Hajek Decl., Ex. 1 at 4-46 to 4-47.) The predicted permanent injury of 436 Cuvier's beaked whales is especially significant in light of NOAA's estimate that there are as few as 1,211 such whales remaining off the entire U.S. west-coast. The EA also predicts 710 "takes," including twenty-eight TTS exposures, of blue whales, fin whales, humpback whales, sei whales, and sperm whales–all of which are endangered species.

Boxed in by its own findings, the Navy has argued that its environmental assessment, on which it based its decision not to prepare an EIS, is methodologically

flawed and inaccurate. Defendants contend that the EA makes a number of assumptions that led it to overestimate the amount of harm the SOCAL exercises will cause, including: (1) marine mammals are uniformly distributed over the SOCAL range, (2) marine mammals have omni-directional hearing, (3) marine mammals would be exposed to the maximum sound intensity level based on their horizontal distance from its source, and (4) that marine mammals will not dive or exhibit other avoidance behavior.

The Court is simply not equipped to evaluate the merits of these contentions. It is not the place of lawyers or the Court to conduct a de novo review of the scientific conclusions of an agency, in this case revising the total number of takes and injuries by altering the underlying assumptions to the scientific study, and on that basis finding the SOCAL exercises will not have a significant impact on the environment. The Court has no basis with which to judge how and to what extent changing any of the challenged assumptions would impact the Navy's prior conclusions.

Moreover, it is not even clear that the assumptions necessarily led to an *over*estimation of the number of takes. For example, if marine mammals were not, in fact, uniformly distributed over the SOCAL range, and instead were concentrated in the area where the exercises took place, even more marine mammals would be harassed or injured than the EA predicts. In addition, rapid diving and avoidance behavior prompted by the use of MFA sonar has been associated with injuries such as hemorrhaging around the brain, ears, kidneys, and acoustic fats, acute spongiotic changes in the central

nervous system, and gas/fat emboli and lesions in the liver, lungs, and other vital organs. (Decl. of Sentiel Rommel ¶ 7.) Failure to take such avoidance behavior into account may therefore also have led the Navy to underestimate the number of takes that would occur.

Finally, Plaintiffs argue that Defendants' EA has additional methodological deficiencies, such as using highly trained, captive animals desensitized to anthropogenic noise to determine the sound level thresholds for harassment and injury, that lead it to "grossly underestimat[e] both the volume and severity of likely impacts on marine life." Although the number of takes listed in the EA are simply predictions, and may over or underestimate the actual harm that will occur, the Court is satisfied that the agency "made a reasoned decision based on its evaluation of the evidence." *Earth Island Inst. v. United States Forest Serv.*, 351 F.3d 1291, 1301 (9th Cir. 2003) ("Because analysis of scientific data requires a high level of technical expertise, courts must defer to the informed discretion of the responsible federal agencies."); *Marsh v. Ore. Natural Res. Council, Inc.*, 490 U.S. 360, 378, 104 L. Ed. 2d 377, 109 S. Ct. 1851 (1989) ("When specialists express conflicting views, an agency must have discretion to rely on the reasonable opinions of its own experts, even if a court may find contrary views more persuasive.").

Based on the studies establishing a scientific consensus on the correlation between the use of MFA sonar and mass whale strandings, the evidence indicating MFA sonar disrupts activities critical to marine mammals' survival, such as food foraging and mating, and the conclusions of the Navy's own scientific study that

the SOCAL exercises will cause 170,000 Level B harassment exposures and 466 permanent injuries to marine mammals, including five endangered species, the Court finds that Plaintiffs have raised substantial questions as to whether the SOCAL exercises will have a significant impact on the environment. Plaintiffs have therefore demonstrated a probability of success on their claim that the Navy's failure to prepare and environmental impact statement was arbitrary and capricious and in violation of NEPA and the APA.

The Court further finds that Plaintiffs have demonstrated a probability of success on their claims that Defendants' proposed mitigation measures were inadequate. An agency may avoid the requirement to prepare an EIS by adopting mitigation measures sufficient to eliminate any substantial questions over the potential for significant impact on the environment. *National Parks & Conservation Ass'n,* 241 F.3d at 733-34. ("In evaluating the sufficiency of mitigation measures, we consider whether they constitute an adequate buffer against the negative impacts that may result from the authorized activity. Specifically, we examine whether the mitigation measures will render such impacts so minor as to not warrant an EIS."). The mitigation measures Defendants have proposed in the instant case are far from sufficient to obviate the need for an EIS. Ironically, Defendants have actually reduced their mitigation efforts and adopted measures even less protective than those the Court previously found insufficient. (*See* CV 06-4131 FMC (FMOx), July 3, 2006, Temporary Restraining Order and July 5, 2006, Order Denying Defendants' *Ex Parte* Applications.) The Navy has eliminated (1) its provisions requiring power-downs during surface

ducting conditions (when sound travels greater distances), at night and in other low visibility conditions (when whales that would be affected are more difficult to see); (2) the twelve nautical mile coastal buffer zone, and (3) additional protection measures during "chokepoint" exercises.

What few mitigation measures remain continue to be ineffective. A "safety zone" of 1,000 yards, for example, does little to mitigate the impact of MFA sonar's effect on beaked whales where sound levels may not dissipate to sublethal levels for 5,000 meters. (*See* Horowitz Decl., Ex. 59 (acoustic energy map); Decl. of Linda Weilgart (noting mortality may occur at levels between 170-184 dB and as low as 150-155 dB); Decl. of Edward Parsons (Parsons Decl.) ¶ 17 (noting that sound can travel hundreds of miles under water).) The presence of visual monitors looking for whales is likewise of little value where beaked whales, which are the most susceptible to injury from MFA sonar, are regularly submerged in deep dives that last as long as sixty minutes. (Parsons Decl. ¶ 10; Horowitz Decl., Ex. 44 (study finding a 5 percent chance under ideal conditions of observing the presence of beaked whales close to a vessel, and a 0 percent chance of detecting a beaked whale at 1 kilometer using 7x binoculars).)

Plaintiffs have also demonstrated a probability of success on their claims that Defendants violated NEPA because their EA failed to consider reasonable alternatives or cumulative impacts. The Ninth Circuit has concluded that, in furtherance of NEPA's goal "that federal agencies infuse in project planning a thorough consideration of environmental values," federal agencies must

sufficiently study, develop, and describe alternatives as part of the "environmental decisionmaking process." *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) (internal quotations and citations omitted). The environmental decisionmaking planning process requires the Navy to give "full and meaningful consideration" to reasonable alternatives. *Natural Resources Defense Council v. Evans*, 279 F. Supp. 2d 1129, 1165-66 (N.D. Cal. 2003); *see also National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 733, (9th Cir. 2001) (" . . . repeated generic statement that the effects are unknown does not constitute the requisite 'hard look' mandated by the statute if preparation of an EIS is to be avoided").

As the Ninth Circuit has explained:

> consideration of alternatives is critical to the goals of NEPA even where a proposed action does not trigger the EIS process. This is reflected in the structure of the statute: while an EIS must also include alternatives to the proposed action, 42 U.S.C. § 4332(2)(C)(iii) (1982), the consideration of alternatives requirement is contained in a separate subsection of the statute and therefore constitutes an independent requirement. *See id.* § 4332(2)(E). The language and effect of the two subsections also indicate that the consideration of alternatives requirement is of wider scope than the EIS requirement.

Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1228-29 (9th Cir.1988).

It does not appear that Defendants adequately considered reasonable alternative mitigation measures, such

as those proposed by the CCC, used by allies such as Australia during exercises employing MFA sonar, or even those the Navy itself employed during RIMPAC 2006. (*See* Hajek Decl., Ex. 1 at 5-5 to 5-8 (succinctly dismissing ten proposals with little analysis and failing to discuss other alternatives).) Defendants also failed to consider any geographical alternatives, and its conclusory single sentence argument that the SOCAL range is "uniquely situated to support these exercises" is insufficient to show that any alternatives would have been unreasonable, making consideration unnecessary. *'Ilio 'Ulaokalani Coalition v. Rumsfeld*, 464 F.3d 1083, 1100-01 (9th Cir. 2006) (holding that Army violated NEPA by failing to consider a location other than Hawaii for transformation of an army brigade despite stated strategic importance of area and evidence that action was "critical for the training of soldiers in conditions that would arise in expected combat situations.").

Finally, Defendants failed to adequately consider the cumulative impacts of the SOCAL exercises. Despite the EA's conclusion that the SOCAL exercises will cause 8,000 TTS exposures and 466 instances of permanent injury, and evidence that the Navy regularly conducts unit level exercises using MFA sonar in the region, in one paragraph the EA dismissed the potential for cumulative impacts and concluded that the SOCAL exercises "would not have any significant contribution to the cumulative effects on marine mammals" based on the use of mitigation measures the Court has already found ineffectual. Although it is possible that the EA's findings could have been supported by further study and modeling incorporating the proposed mitigation measures, the EA's conclusion is unsupported by the

assessment's current findings and model, and the failure to study and analyze the potential for such cumulative impacts in light of those findings renders the EA fatally inadequate. *See Klamath-Siskiyou Wildlands Ctr. v. BLM*, 387 F.3d 989, 994 (9th Cir. 2004) ("A proper consideration of the cumulative impacts of a project requires some quantified or detailed information; general statements about possible effects and some risk do not constitute a hard look absent a justification regarding why more definitive information could not be provided. The analysis must be more than perfunctory; it must provide a useful analysis of the cumulative impacts of past, present, and future projects." (internal quotations and citations omitted)).

2. The Coastal Zone Management Act (CZMA)

Plaintiffs contend that Secretary of the Navy Donald Winter and the United States Department of the Navy (Navy Defendants) violated the CZMA by submitting a CD to the CCC for the SOCAL exercises that did not take the planned use of MFA sonar into account and by failing to adopt the mitigation measures the CCC subsequently determined were necessary for the Navy's actions to comply with the CCMP. The CZMA requires that "[e]ach federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved state management programs." 16 U.S.C. § 1456(c)(1). Under the CZMA, agencies must comply with "the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the

Federal agency." 15 C.F.R. § 930.32(a)(1). Agencies must also submit a CD "for all Federal agency activities affecting any coastal use or resource" to the applicable state agency. 15 C.F.R. 930.34. Although the CZMA lacks a citizen suit provision, judicial review of agency compliance is available pursuant to the APA. *See, e.g., Friends of Earth v. United States Navy,* 841 F.2d 927, 936 (9th Cir. 1988); 5 U.S.C. §§ 701-06. The burden of demonstrating maximum consistency practicable with the CCMP rests with the Navy. *California Coastal Comm'n v. United States,* 5 F. Supp. 2d 1106, 1112 (S.D. Cal. 1998).

The Navy Defendants argue that they were not required to analyze or discuss the proposed use of MFA sonar in the CD they submitted to the CCC because the MFA sonar use would not affect any costal resources. For the reasons that Defendants' determination that the SOCAL exercises would not have a significant impact on the environment was arbitrary and capricious, as discussed above, the Court finds that the Navy Defendants' determination that the use of MFA sonar in the SOCAL range would not affect any of California's coastal resources was similarly arbitrary and capricious and in violation of the APA.

The Navy Defendants have raised a number of additional arguments in support of their decision under the CZMA, none of which the Court finds persuasive. First, they contend that because the exercises will take place at least five nautical miles from shore, and often at least twelve nautical miles from shore, and because California's coastal zone extends only three nautical miles from shore, that there will be no impact on coastal re-

sources. However, as discussed above, MFA sonar can affect marine mammals, designated as coastal resources by statute, from miles away. (*See, e.g.*, Parsons Decl. ¶ 17 (noting that "these military exercises may ensonify coastal waters, even though exercises may be conducted outside the coastal zone.") Moreover, consistency review is triggered regardless of where the harm occurs if it affects coastal resources, which include marine mammals that are periodically within the coastal zone. 16 U.S.C. § 1456(c)(1)(A) ("Each Federal agency activity within *or outside* the coastal zone that affects any land or water use or natural resource *of* the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs.") (emphasis added); *California v. Norton*, 311 F.3d 1162, 1172 (9th Cir. 2002) (requiring consistency review of offshore oil leases where seismic surveys outside the coastal zone may permanently injure marine mammals); Jefferson Decl. ¶ 6 ("Most of the species regularly found in the exercise area may be expected to occur there within 3 nautical miles of shore, either exclusively as in the case of the coastal bottlenose dolphin or as part of their range").

Second, the Navy Defendants argue that temporary harassment of marine mammals is insufficient to constitute an "activity . . . that *affects*" a natural resource because it does not cause injury. Even if this were true, Defendants' own EA predicts the use of MFA sonar during the SOCAL exercises *will* cause 466 instances of permanent injury to beaked and ziphiid whales.

Third, the Navy Defendants insist that a consistency determination need not discuss an activity unless it will have a measurable impact on the "populations of marine mammals," and that, because there "have been no systematic declines in any marine mammal populations during the decades of MFA sonar use by the Navy," it was justified in not discussing its proposed use of MFA sonar. The Court has already addressed Defendants' "lack of documented population decline" argument in its discussion of Plaintiffs' NEPA claims, and it has even less force here where the burden rests on the Navy Defendants to demonstrate compliance. In addition, as the Ninth Circuit established in *California v. Norton*, federal activities "that may permanently injure marine mammals" affect coastal resources and require a consistency determination; an impact on entire populations is not required. 311 F.3d at 1172 n.5. Moreover, Plaintiffs have presented evidence that the use of MFA sonar *can* detrimentally impact entire populations of species, given its potential to disrupt feeding and mating as well as damaging marine mammals' primary sense. (Parsons Decl. ¶¶ 7-9 (concluding that "there is significant potential for population-level effects from individual JTFEX and COMPTUEX exercises" and that even displacement from non-injurious, relatively low energy level sonic harassment "could have population-level effects, particularly if the displacement coincides with seasonal breeding or foraging.").

Finally, the Navy Defendants argue that the mitigation measures the CCC required the Navy to employ during the SOCAL exercises in order to comply with the CCMP are not, in fact, required in order for the Navy to comply with the CCMP. They argue that the mitigation

measures the Navy and NMFS have developed are sufficient "to maintain healthy populations of marine mammals in SOCAL." (Opp'n 23:14-15.) Defendants' proposed mitigation measures are woefully inadequate and ineffectual, as discussed above, and Defendants have failed to establish that the CCC's proposed mitigation measures are either unnecessary or not required under the CCMP. Accordingly, the Court finds that Plaintiffs have demonstrated a probability of succeeding on the merits of their claims under the CZMA.

3. The Endangered Species Act (ESA)

Plaintiffs' fifth cause of action, against the National Marine Fisheries Service, Assistant Administrator for Fisheries William Hogarth, Administrator of the National Oceanographic and Atmospheric Administration Vice Admiral Conrad Lautenbacher Jr., and Secretary of the Department of Commerce Carlos Gutierrez (collectively NMFS Defendants), alleges that the NMFS Defendants failed to prepare an adequate Biological Opinion (BiOp) and Incidental Take Statement (ITS) in violation of the ESA and APA. Although courts have vacated BiOps and ITSs that contained "structural flaws," the Court is satisfied that the NMFS Defendants in this case met their statutory obligation to "use the best scientific and commercial data available." 16 U.S.C. § 1536(a)(2); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 481 F.3d 1224, 1239 (9th Cir. 2007) (upholding a finding that NMFS violated the ESA where, "[a]t its core, the 2004 BiOp amounted to little more than an analytical slight [sic] of hand, manipulating the variables to achieve a 'no jeopardy' finding. Statistically speaking, using the 2004 BiOp's analytical

framework, the dead fish were really alive. The ESA requires a more realistic, common sense examination.").

Plaintiffs argue that NMFS's BiOp and ITS did not "use the best scientific and commercial data available" because they relied on the Navy's flawed acoustic models and adopted the Navy's exposure thresholds from its EA to determine the number of takes. As discussed above, the Court is satisfied with the methodology and conclusions employed by the agency experts in reaching their conclusions as to the number of takes. It does not find that there are any "structural flaws" in the BiOp or ITS, and, as Defendants note, NMFS properly considered the vast universe of available data on the impact of MFA sonar.

Plaintiffs also argue that NMFS's analysis of acoustic impacts on endangered and threatened fish species were inadequate and that NMFS failed to consider cumulative impacts. The Court disagrees. Having carefully reviewed the BiOp and ITS, it finds that these issues were properly considered and, unlike the conclusory findings regarding cumulative impacts in the Navy's EA, sufficiently analyzed. Accordingly, the Court finds that Plaintiffs have failed to demonstrate a probability of success on their claim against the NMFS Defendants for violation of the ESA and APA.

B. Possibility of Irreparable Harm

Plaintiffs have demonstrated that MFA sonar can injure and kill marine mammals, as well as cause population-affecting levels of disruption. Defendants' own study concludes that the SOCAL exercises in particular will cause widespread harm to nearly thirty species of

marine mammals, including five species of endangered whales, and may cause permanent injury and death.

Where, as here, plaintiffs demonstrate a strong likelihood of prevailing on the merits of their claims, injunctive relief is appropriate where there is a "possibility of irreparable harm." *Faith Ctr. Church Evangelistic Ministries v. Glover*, 480 F.3d 891, 906 (9th Cir. 2007); *Earth Island Inst. v. United States Forest Serv.*, 442 F.3d 1147, 1159 (9th Cir. 2006); *Cmty. House, Inc. v. City of Boise*, 468 F.3d 1118, 1123 (9th Cir. 2006). The Supreme Court has held that, "[e]vironmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, i.e., irreparable. If such injury is sufficiently likely, therefore, the balance of harms will usually favor the issuance of an injunction to protect the environment." *Amoco Prod. Co. v. Vill of Gambell*, 480 U.S. 531, 545, 107 S. Ct. 1396, 94 L. Ed. 2d 542 (1987); *see also Save Our Sonoran, Inc. v. Flowers*, 408 F.3d 1113, 1125 (9th Cir. 2005).

From the numerous scientific studies, declarations, reports, and other evidence before the Court, Plaintiffs have established to a near certainty that use of MFA sonar during the planned SOCAL exercises will cause irreparable harm to the environment and Plaintiffs' standing declarants. The Court is also satisfied that the balance of hardships tips in favor of granting an injunction, as the harm to the environment, Plaintiffs, and public interest outweighs the harm that Defendants would incur if prevented from using MFA sonar, absent the use of effective mitigation measures, during a subset of their regular activities in one part of one state for a lim-

ited period. Accordingly, the Court grants Plaintiffs' requested relief and enjoins Defendants' use of MFA sonar during the remaining SOCAL exercises.

CONCLUSION

For the foregoing reasons, the Court hereby **DENIES** Defendants' Motion to Dismiss or Stay (docket no. 14). In addition, Defendants' request during oral argument for a stay of the requested injunctive relief pending appeal is **DENIED**.

The Court **GRANTS** Plaintiffs' Motion for Preliminary Injunction (docket no. 21) as to Plaintiffs' first four causes of action, for violations of NEPA, the CZMA, and the APA, and **DENIES** Plaintiffs' Motion as to Plaintiffs' fifth cause of action for violation of the ESA and the APA.

Defendants are hereby enjoined from using MFA sonar during the fourteen challenged COMPTUEX and JTFEX exercises planned in the SOCAL range through January 2009.

IT IS SO ORDERED.

APPENDIX J

[Seals Omitted]

DEPUTY SECRETARY OF DEFENSE

1010 Defense Pentagon
Washington, D.C. 20301-1010

[Jan. 23, 2007]

MEMORANDUM FOR SECRETARY OF THE NAVY

SUBJECT: National Defense Exemption from Requirements of the Marine Mammal Protection Act for Certain DoD Military Readiness Activities That Employ Mid-Frequency Active Sonar or Improved Extended Echo Ranging Sonobuoys

Pursuant to Title 16, Section 1371(f), of the United States Code, and having conferred with the Secretary of Commerce, I have determined that it is necessary for the national defense to exempt all military readiness activities that employ mid-frequency active sonar or Improved Extended Echo Ranging sonobuoys (IEER), either during major training exercises, or within established Department of Defense maritime ranges or establishes operating areas, from compliance with the requirements of the Marine Mammal Protection Act, Title 16, Section 1361-1421h, of the United States Code. For purposes of this exemption, mid-frequency active sonar is defined as those active sonar systems operating within the frequency range of 1 kHz to 10 kHz. IEER is a new sensor system that is finishing development and

nearing deployment. A military readiness activity is defined in Section 315(f) of Public Law 107-314.

Specific actions falling within these categories of actions are exempted for a period of two years from today's date, or the date at which the Department of Navy is granted authorization under the Marine Mammal Protection Act for one or both of these categories of actions as associated with a specific proposed activity, whichever is earliest. In the event the exemption terminates as to a specific proposed activity having been granted authorization under the Marine Mammal Protection Act for one or both of these categories of actions, the exemption shall remain in full force and effect as to all other exempted categories of actions.

During the exemption period, the Department of Navy will execute the plan coordinated with the Department of Commerce to come into full compliance with the requirements of the Marine Mammal Protection Act. During this exemption period, all exempted military readiness activities employing mid-frequency active sonar shall follow the attached "Mid-Frequency Active Sonar (MFAS) Mitigation Measures during Major Training Exercises or within Established DoD Maritime Ranges and Established Operating Areas." Before using IEER for training, the Department of the Navy will develop with the National Marine Fisheries Service mutually agreeable mitigation measures applicable to IEER as information evolves on its use and tactics.

/s/ GORDON ENGLAND

Attachment:

Mid-Frequency Active Sonar (MFAS) Mitigation Measures during Major Training Exercises or within Established DoD Maritime Ranges and Established Operating Areas

ATTACHMENT

Mid-Frequency Active Sonar Mitigation Measures during Major Training Exercises or within Established DoD Maritime Ranges and Established Operating Areas

1. General Maritime Protective Measures: Personnel Training:

1. All lookouts onboard platforms involved in ASW training events will review the NMFS-approved Marine Species Awareness Training (MSAT) material prior to use of mid-frequency active sonar (MFA).

2. All Commanding Officers, Executive Officers, and officers standing watch on the bridge will have reviewed the MSAT material prior to a training event employing the use of MFA.

3. Navy lookouts will undertake extensive training in order to qualify as a watchstander in accordance with the Lookout Training Handbook (NAVEDTRA 12968-B).

4. Lookout training will include on-the-job instruction under the supervision of a qualified, experienced watchstander. Following successful completion of this supervised training period, lookouts will complete the Personal Qualification Standard program, certifying that they have demonstrated the necessary skills (such as detection and reporting of partially submerged objects). This does not preclude personnel being trained as lookouts from being counted as those listed in previous measures so long as su-

pervisors monitor their progress and performance.

5. Lookouts will be trained in the most effective means to ensure quick and effective communication within the command structure in order to facilitate implementation of protective measures if marine species are spotted.

II. General Maritime Protective Measures: Lookout and Watchstander Responsibilities:

6. On the bridge of surface ships, there will always be at least three people on watch whose duties include observing the water surface around the vessel.

7. In addition to the three personnel on watch noted previously, all surface ships participating in ASW exercises will, have at all times during the exercise at least two additional personnel on watch as lookouts.

8. Personnel on lookout and officers on watch on the bridge will have at least one set of binoculars available for each person to aid in the detection of marine mammals.

9. On surface vessels equipped with MFA, pedestal-mounted "Big Eye" (20x110) binoculars will be present and in good working order to assist in the detection of marine mammals in the vicinity of the vessel.

10. Personnel on lookout will employ visual search procedures employing a scanning methodology

in accordance with the Lookout Training Handbook (NAVEDTRA 12968-B).

11. After sunset and prior to sunrise, lookouts will employ Night Lookouts Techniques in accordance with the Lookout Training Handbook.

12. Personnel on lookout will be responsible for reporting all objects or anomalies sighted in the water (regardless of the distance from the vessel) to the Officer of the Deck, since any object or disturbance (e.g., trash, periscope, surface disturbance, discoloration) in the water may be indicative of a threat to the vessel and its crew or indicative of a marine species that may need to be avoided as warranted.

III. Operating Procedures

13. A Letter of Instruction, Mitigation Measures Message, or Environmental Annex to the Operational Order will be issued prior to the exercise to disseminate further the personnel training requirement and general marine mammal protective measures.

14. Commanding Officers will make use of marine species detection cues and information to limit interaction with marine species to the maximum extent possible consistent with safety of the ship.

15. All personnel engaged in passive acoustic sonar operation (including aircraft, surface ships, or submarines) will monitor for marine mammal vocalizations and report the detection of any

marine mammal to the appropriate watch station for dissemination and appropriate action.

16. During MFA operations, personnel will utilize all available sensor and optical systems (such as Night Vision Goggles to aid in the detection of marine mammals.

17. Navy aircraft participating in exercises at sea will conduct and maintain, when operationally feasible and safe, surveillance for marine species of concern as long as it does not violate safety constraints or interfere with the accomplishment of primary operational duties.

18. Aircraft with deployed sonobuoys will use only the passive capability of sonobuoys when marine mammals are detected within 200 yards of the sonobuoy.

19. Marine mammal detections will be immediately reported to the assigned Aircraft Control Unit for further dissemination to ships in the vicinity of the marine species as appropriate when it is reasonable to conclude that the course of the ship will likely result in a closing of the distance to the detected marine mammal.

20. Safety Zones - When marine mammals are detected by any means (aircraft, shipboard lookout, or acoustically) within 1,000 yards of the sonar dome (the bow), the ship or submarine will limit active transmission levels to at least 6 dB below normal operating levels.

    (i) Ships and submarines will continue to limit maximum transmission levels by this 6-dB fac-

tor until the animal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2,000 yards beyond the location of the last detection.

(ii) Should a marine mammal be detected within or closing to inside 500 yards of the sonar dome, active sonar transmissions will be limited to at least 10 dB below the equipment's normal operating level. Ships and submarines will continue to limit maximum ping levels by this 10-dB factor until the animal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2,000 yards beyond the location of the last detection.

(iii) Should the marine mammals be detected within or closing to inside 200 yards of the sonar dome, active sonar transmissions will cease. Sonar will not resume until the animal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2,000 yards beyond the location of the last detection.

(iv) Special conditions applicable for dolphins and porpoises only: If, after conducting an initial maneuver to avoid close quarters with dolphins or porpoises, the Officer of the Deck concludes that dolphins or porpoises are deliberately closing to ride the vessel's bow wave, no further mitigation actions are necessary while the dolphins or porpoises continue to exhibit bow wave riding behavior.

(v) If the need for power-down should arise as detailed in "Safety Zones" above, the ship or submarine shall follow the requirements as though they were operating at 235 dB - the normal operating level (i.e., the first power-down will be to 229 dB, regardless of at what level above 235 sonar was being operated).

21. Prior to start-up or restart of active sonar, operators will check that the Safety Zone radius around the sound source is clear of marine mammals.

22. Sonar levels (generally)–The ship or submarine will operate sonar at the lowest practicable level, not to exceed 235 dB, except as required to meet tactical training objectives.

23. Helicopters shall observe/survey the vicinity of an ASW exercise for 10 minutes before the first deployment of active (dipping) sonar in the water.

24. Helicopters shall not dip their sonar within 200 yards of a marine mammal and shall cease pinging if a marine mammal closes within 200 yards after pinging has begun.

25. Submarine sonar operators will review detection indicators of close-aboard marine mammals prior to the commencement of ASW operations involving active mid-frequency sonar.

26. Increased vigilance during major ASW training exercises with tactical active sonar when critical conditions are present:

Based on lessons learned from strandings in the Bahamas (2000), the Madeiras (2000), the Canaries (2002) and Spain (2006), beached whales are of particular concern since they have been associated with MFA operations. Navy should avoid planning major ASW training exercises with MFA in areas where they will encounter conditions that, in their aggregate, may contribute to a marine mammal stranding event.

The conditions to be considered during exercise planning include:

(1) Areas of at least 1,000 m depth near a shoreline where there is a *rapid change in bathymetry* on the order of 1,000-6,000 meters occurring across a relatively short horizontal distance (e.g., 5 nm).

(2) Cases for which *multiple ships or submarines* ($\geq$ 3) operating MFA in the same area over extended periods of time ($\geq$ 6 hours) in close proximity ($\leq$ 10 nm apart).

(3) An area surrounded by *land masses, separated by less than 35 nm and at least 10 nm in length*, or an *embayment*, wherein operations involving multiple ships/subs ($\geq$ 3) employing MFA near land may produce sound directed toward the channel or embayment that may cut off the lines of egress for marine mammals.

(4) Although not as dominant a condition as bathymetric features, the historical presence of a *significant surface duct* (i.e., a mixed layer of

constant water temperature extending from the sea surface to 100 or more feet).

If the major exercise must occur in an area where the above conditions exist in their aggregate, these conditions must be fully analyzed in environmental planning documentation. Navy will increase vigilance by undertaking the following additional protective measure:

A dedicated aircraft (Navy asset or contracted aircraft) will undertake reconnaissance of the embayment or channel ahead of the exercise participants to detect marine mammals that may be in the area exposed to active sonar. Where practical, advance survey should occur within about two hours prior to MFA use, and periodic surveillance should continue for the duration of the exercise. Any unusual conditions (e.g., presence of sensitive species, groups of species milling out of habitat, any stranded animals) shall be reported to the Officer in Tactical Command (OTC), who should give consideration to delaying, suspending or altering the exercise.

All Safety Zone requirements described in Measure 20 apply.

The post-exercise report must include specific reference to any event conducted in areas where the above conditions exist, with exact location and time/duration of the event, and noting results of surveys conducted.

IV. Coordination and Reporting

27. Navy will coordinate with the local NMFS Stranding Coordinator regarding any unusual marine mammal behavior and any stranding, beached live/dead, or floating marine mammals that may occur at any time during or within 24 hours after completion of mid-frequency active sonar use associated with ASW training activities.

28. Navy will submit a report to the Office of Protected Resources, NMFS, within 120 days of the completion of a Major Exercise. This report must contain a discussion of the nature of the effects, if observed, based on both modeled results of real-time events and sightings of marine mammals.

29. If a stranding occurs during an ASW exercise, NMFS and Navy will coordinate to determine if MFA should be temporarily discontinued while the facts surrounding the stranding are collected.

APPENDIX K

THE WHITE HOUSE

WASHINGTON

January 15, 2008

MEMORANDUM FOR

THE SECRETARY OF DEFENSE
THE SECRETARY OF COMMERCE

SUBJECT: Presidential Exemption from the Coastal Zone Management Act

By the authority vested in me as President by the Constitution and the laws of the United States, including section 1456(c)(1)(B) of title 16, United States Code, and to ensure effective and timely training of the United States naval forces in anti-submarine warfare using mid-frequency active sonar:

I hereby exempt from compliance with the requirements of section 1456(c)(1)(A) of title 16 (section 307 (c)(1)(A) of the Coastal Zone Management Act) those elements of the Department of the Navy's anti-submarine warfare training during Southern California Operating Area Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Exercises (JTFEX) involving the use of mid-frequency active sonar. These exercises are more fully described in the Environmental Assessment/ Overseas Environmental Assessment prepared for the Commander, United States Pacific Fleet, dated February 2007.

On January 3, 2008, as modified on January 10, 2008, the United States District Court for the Central District of California determined that the Navy's use of mid-frequency active sonar was not in compliance with section 1456(c)(1)(A), and issued an order that is appealable under section 1291 or 1292 of title 28, United States Code. On January 11, 2008, the Secretary of Commerce made a written request that the Navy be exempted from compliance with section 1456(c)(1)(A) in its use of mid-frequency active sonar during COMPTUEX and JTFEX. As part of that request, the Secretary of Commerce certified that mediation under section 1456(h) is not likely to result in the Navy's compliance with section 1456(c)(1)(A).

I hereby determine that the COMPTUEX and JTFEX, including the use of mid-frequency active sonar in these exercises, are in the paramount interest of the United States. Compliance with section 1456(c)(1)(A) would undermine the Navy's ability to conduct realistic training exercises that are necessary to ensure the combat effectiveness of carrier and expeditionary strike groups. This exemption will enable the Navy to train effectively and to certify carrier and expeditionary strike groups for deployment in support of world-wide operational and combat activities, which are essential to national security.

/s/ GEORGE BUSH

APPENDIX L

[Seal Omitted]
CHAIRMAN

EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
Washington, D.C. 20503

January 15, 2008

The Honorable Donald C. Winter
Secretary of the Navy
The Pentagon
Washington, D.C. 20350

SUBJECT: Emergency Alternative Arrangements for the U.S. Navy's Use of MFA Sonar in the Southern California Operating Area Composite Training Unit Exercises and Joint Task Force Training Exercises Scheduled to Occur through January 23, 2009

Dear Secretary Winter:

I am responding to your request of January 10, 2008, supplemented by your letter of January 11, 2008, seeking to obtain Council on Environmental Quality (CEQ) approval of alternative arrangements pursuant to 40 C.F.R. § 1506.11 for implementing the procedural provisions of the National Environmental Policy Act, 42 U.S.C. §§ 4321 *et seq.* (NEPA). The CEQ regulations implementing the procedural provisions of NEPA provide that where emergency circumstances make it necessary to take an action without observing the normal

procedures set forth in those regulations, the federal agency taking the action should consult with CEQ about alternative arrangements for compliance with NEPA.

The United States Navy is requesting that CEQ provide for alternative arrangements for NEPA compliance for the Navy's proposed use of mid-frequency active ("MFA") sonar during Commander THIRD Fleet's nine (9) training exercises, four (4) Composite Unit Training Exercises ("COMPTUEX") and five (5) Joint Task Force Exercises ("JTFEX"), in the Southern California ("SOCAL") Operating Area. Your request and these alternative arrangements are based on the SOCAL Operating Area climate, weather conditions, land mass distribution, and the MFA training proposed for the four COMPTUEX and five JTFEX scheduled between today and January 23, 2009.

The COMPTUEX and JTFEX are major warfare training exercises that are required to certify naval Strike Groups as ready for deployment into combat operations. Strike Groups are a package or formation of Navy ships that function as a Carrier Strike Group or an Expeditionary Strike Group. A Carrier Strike Group is formed around an Amphibious Assault Ship with an embarked Marine Expeditionary Unit and is able to move embarked Marine Expeditionary Unit elements ashore via helicopter or amphibious-type craft. MFA sonar is defined as an active sonar system that operates within the 1 kHz to 10 kHz frequency range and MFA sonar capability allows the Strike Group to defend itself against quiet diesel electric submarines that may come within range or attack any of the ships in the Strike Group.

The SOCAL Operating Area is uniquely suited to conducting the Navy COMPTUEX and JTFEX because it contains all of the land, air, and at-sea bases necessary for conducting the exercises, and the shallow coastal areas in SOCAL realistically simulate areas where the Navy is likely to encounter hostile submarines. The SOCAL Operating Area includes Warning Area 291 (W-291), and the Southern California Antisubmarine Warfare Range (SOAR). The use of MFA sonar will be within W-291 and SOAR (Attachment A). SOAR is an instrumented underwater range which allows the Navy to monitor and evaluate the success of the Strike Group training. The Navy has conducted MFA sonar training exercises in the Southern California Operating Area since at least the 1970s.

The Navy is currently evaluating the environmental impact of MFA sonar training exercises through its development of the SOCAL Range Complex Environmental Impact Statement (SOCAL EIS). The Navy began the SOCAL EIS process in late 2006 and published its notice of intent on December 21, 2006. That EIS will meet the procedural requirements of NEPA for all training, including MFA sonar training in SOCAL. To comply with NEPA procedural requirements while developing the EIS, the Navy prepared an environmental assessment of the SOCAL training proposed for the time period prior to completion of the EIS. In addition, the Navy issued a consistency determination in accordance with the procedural requirements of the Coastal Zone Management Act, 16 U.S.C. §§ 1451 *et seq.* (CZMA).

In January 2007, the Deputy Secretary of Defense issued a National Defense Exemption (NDE) under the Marine Mammal Protection Act (MMPA) (16 U.S.C. § 1371(f)). The NDE provides for protection of marine mammals in the absence of an MMPA Letter of Authorization by including 29 specific conditions to minimize potential impacts on marine mammals. These 29 mitigation measures were developed in coordination with the National Marine Fisheries Service (NMFS), the agency with substantive responsibility for marine mammals. The NDE allows time for the Navy to executive a plan coordinated with the Department of Commerce to obtain a Letter of Authorization under the usual procedural requirements of the MMPA. The plan calls for the Navy to complete the usual MMPA process in conjunction with the SOCAL EIS process by the time the NDE expires on January 23, 2009. The likely effects of MFA sonar training on threatened and endangered marine mammals were further analyzed in consultation with NMFS under section 7 of the Endangered Species Act, 16 U.S.C. §§ 1531 *et seq.* (ESA). In February of 2007, the Navy concluded consultation with NMFS, which issued a Biological Opinion that includes an incidental take statement that exempts the Navy from the prohibitions in section 9 of the Endangered Species Act through January 2009.

The Navy began the SOCAL EIS process that includes analysis of MFA sonar training and prepared the environmental assessment in an effort to provide procedural NEPA compliance for COMPTUEX and JTFEX training in the SOCAL Operating Area. The Navy is preparing the draft SOCAL EIS for publication in early 2008. The draft EIS will include an analysis of the di-

rect, indirect, and cumulative effects of MFA sonar training on marine mammals and provide the basis for finalizing mitigation measures for the use of MFA sonar in the SOCAL Operating Area. The requested alternative arrangements are intended to provide a process for environmental impact assessment and decision-making for the nine exercises, four COMPTUEX and five JTFEX, involving MFA sonar to be conducted prior to January 23, 2009, or completion of the SOCAL EIS process, whichever is earlier.

The record supporting the Navy request includes: your letters to CEQ dated January 10 and 11, 2008, with attachments; classified and unclassified briefing materials provided to CEQ by the Navy; CEQ discussions with NMFS; the environmental analyses conducted by the Navy in the environmental assessment for proposed COMPTUEX and JTFEX exercises and in the preliminary draft environmental impact statement for the SOCAL Range Complex; the February 9, 2007, Biological Opinion issued by NMFS pursuant to Section 7 of the ESA; after action report analyses prepared for NMFS by the Navy (Attachment B-G); the January 23, 2007, NDE; and the January 9, 2008, most recent review of the environmental effects of MFA sonar training in the SOCAL Operating Area by NMFS (Attachment H).

In its most recent review, NMFS considered the effects of Navy training exercises in SOCAL on marine mammals in and adjacent to the Navy's SOCAL Operating Area. James H. Lecky, the Director of the NMFS Office of Protected Resources, determined that while there is some potential for injury, the mitigation measures employed as a result of the NDE and the reporting

and monitoring measures outlined in the Biological Opinion will minimize that risk to marine mammals in and adjacent to the exercise area. This review concludes that "NMFS does not expect the COMPTUEX and JTFEX exercises [through January 23, 2009] to result in adverse population level effects for any of the marine mammal populations." (Attachment H).

The record supporting the Navy request also includes the Orders issued January 3, 2008, and January 10, 2008, by the U.S. District Court for the Central District of California. The District Court has preliminarily determined that an environmental impact statement is necessary for these MFA sonar exercises in the SOCAL Operating Area. Following the November 13, 2007, Order from the Ninth Circuit Court of Appeals, the District Court issued the January 3, 2008, injunction allowing the exercises to proceed subject to specified mitigation measures. Those mitigation measures were modified by the January 10, 2008, order. Your letter of January 11, 2008, further informed me that the modified injunction imposes training restrictions, in particular the unaltered 2200 yard shut down requirement and the 6 dB power down requirement during significant surface ducting conditions, that continue to create a significant and unreasonable risk that Strike Groups will not be able to train and be certified as fully mission capable.

You have explained that the training restrictions set forth in the January 3, 2008, and January 10, 2008, injunctive orders prevent the Navy from providing Strike Groups with adequate proficiency training and create a substantial risk of precluding certification of the Strike Groups as combat ready in order to be deployed. Train-

ing in the use of MFA sonar is a vital component of the pre-deployment training in COMPTUEX and JTFEX. The use of MFA sonar is complex and requires constant training in realistic combat scenarios to maintain proficiency. MFA sonar is the Navy's best means of detecting potentially hostile diesel-electric submarines. The primary Strike Group targets of hostile submarines are the Navy aircraft carrier, which typically carries over 5300 servicemen and civilians, and the Amphibious Assault Ship carrying a Marine Expeditionary Unit. Thus, the inability to train effectively with MFA sonar puts the lives of thousands of Americans directly at risk. If a Strike Group does not gain proficiency in MFA sonar, and cannot be certified as combat ready, the broader national security implications are enormous, and the harm quickly compounds if additional Strike Groups cannot be certified. Lack of such certification places at risk the logistical, defensive and offensive capabilities of these Strike Groups in the event of an undetected attack, further placing at risk the lives of the military and civil service personnel that the Strike Groups support and defend. Because of the unique features of the SOCAL area and the availability of the land, sea, and air bases, the exercises need to be conducted in the SOCAL Range Complex through January 23, 2009, in order to provide certified PACFLEET assets for deployment. Therefore, there are urgent national security reasons for providing alternative arrangements under the CEQ regulations.

The Navy must continue conducting sonar training exercises in portions of the SOCAL Operating Area in January 2008 through January 2009 in order to provide certified PACFLEET assets for deployment. CEQ un-

derstands that the next training exercise is scheduled to take place in the month of January 2008 and that failure to conduct this training exercise will have immediate ramifications for Navy deployments around the world. Therefore, the Navy has requested that CEQ take immediate action on its proposal for alternative arrangements for NEPA compliance.

The Navy has consulted with and obtained comments on its proposal for alternative arrangements from official at NMFS. CEQ has also consulted with the NMFS for purposes of informing its respond to the Navy proposal. Discussions between our staffs, your letter and supporting documents, and the classified declaration and briefings I have received, have clearly determined that the Navy cannot ensure the necessary training to certify strike groups for deployment under the terms of the injunctive orders. Based on the record supporting your request including the information provided during briefings and discussions to CEQ and others—in particular, the Biological Opinion and the NDE in which the Deputy Secretary of Defense determined that the national defense requires this training program and provided the NDE mitigation measures developed in consultation with NMFS—CEQ has concluded that the Navy must be able to conduct the nine SOCAL COMPTUEX and JTFEX in a realistic and effective manner that includes the use of MFA sonar so that naval strike groups can be certified and deployed in a timeframe that does not provide sufficient time to complete an EIS. Therefore, emergency circumstances are present for the nine exercises and alternative arrangements for compliance with NEPA under CEQ regulation 40 C.F.R. § 1506.11 are warranted.

Your request provides CEQ with: (1) Navy's commitment to apply measures for mitigating potential effects on marine mammals from the use of MFA sonar that are provided in the NDE and were developed in consultation with NMFS; (2) public participation procedures for the preparation of the SOCAL EIS; (3) measures for adaptive management; and (4) long-term research commitments. CEQ has had a number of meetings and conference calls with representatives of the Navy, as well as with representatives of the Department of Commerce, as CEQ considered and developed these alternative arrangements.

These alternative arrangements focus on the environmental impact assessments particularly public participation and research, prior to the completion of the SOCAL EIS, that will provide information for the ongoing EIS analysis and future development and analysis of MFA sonar training in the SOCAL Operating Area. These alternative arrangements are based on the proposed training exercises scheduled between today and January 23, 2009 and the conditions present in the SOCAL Operating Area.

PUBLIC PARTICIPATION MEASURES:

The alternative arrangements include the following public participation measures that supplement the current public information plan for the SOCAL EIS described in your letter.

The Navy will provide notice of these alternative arrangements and publish this Decision Memorandum in the Federal Register. In addition, Navy will publish notice of these alternative arrangements in the following newspapers: (1) Los Angeles Times; (2) Sacramento

Bee; (3) San Diego Union-Tribune; (4) North County Times (San Diego County); and (5) Daily Breeze (San Pedro, California).

Concurrent with the Federal Register notice, the Navy will include notices to the parties listed in Attachment E to your request of January 10, 2008, as well as World Wildlife Fund, Nature Conservancy, National Wildlife Federation, Whale and Dolphin Conservation Society, Ocean Mammal Institute, Center for Whale Research, Consortium for Oceanographic Research and Education, National Fisheries Institute, American Sportfishing Association, Coastal Conservation Association, International Fund for Animal Welfare, American Tunaboat Association, Pacific Fisheries Management Council, Western Fish Boat Owners Association, Southern California Lobster and Trap Fisherman's Association, Southern California Trawler's Association, Morro Bay Commercial Fisherman Organization, Southern California Commercial Fishing Association, California Wetfish Producers Association, United Anglers of Southern California, Tuna Club of Santa Catalina Island, International Game Fish Association, Long Beach Sportfishing, Recreational Fishing Alliance, United Anglers of Southern California, United Pier & Shore Anglers of California, Scripps Research Institute, University of California at Santa Cruz, and the Applied Physics Laboratory—University of Washington.

The notices will specifically seek input on the process for reviewing post-exercise assessments and include an offer to meet jointly with Navy representatives from the office of the Assistant Secretary of the Navy (Installations & Environment) and the office of the Chief of Na-

val Operations, and CEQ to discuss the alternative arrangements.

CEQ will be provided copies of any notices made in accordance with the alternative arrangements and the notices will be posted on the website at http://www.socalrangecomplexeis.com.

The Navy will also provide CEQ notice of the post-exercise assessments which the Navy prepares for each exercise within 120 days of completion of each exercise (or 120 days after completion of an exercise which is reported as part of a group of exercises) to which these alternative arrangements apply. Further dissemination of the post-exercise assessments will be determined after considering input received in response to the Navy notice of alternative arrangements and the further dissemination of the post-exercise assessments will be incorporated into the alternative arrangements.

After the conclusion of the alternative arrangements, and no later than March 23, 2009, the Navy will provide a report to CEQ on the use of the alternative arrangements that reviews the value and effectiveness of those arrangements. Notice of the report will be provided in the Federal Register, the five newspapers (Los Angeles Times; Sacramento Bee; San Diego Union-Tribune; North County Times (San Diego County); and Daily Breeze (San Pedro, California)) and on the website at http://www.socalrangecomplexeis.com.

RESEARCH MEASURES:

Efforts to obtain more information about the quantity, distribution, migration, and reactions of marine mammals to MFA sonar is ongoing and will continue.

Consequently, information being obtained will inform compliance with the substantive provisions of the MMPA and ESA, and the procedural requirements of CZMA and NEPA. For NEPA, this information will inform the ongoing SOCAL EIS process as well as future exercise planning in the SOCAL Operating Area and serve to provide the basis for integrated compliance with all environmental statutes.

The Navy is implementing the following research measures to provide for continual improvement in the quality of information available.

a. The Navy is taking measures to improve the information regarding marine mammal presence and density in the SOCAL Operating Area by coordinating with the NMFS to determine the need to identify areas within the SOCAL Operating Area for additional marine mammal surveys. If a need is identified, an implementation plan identifying the areas and providing a schedule for the surveys will be developed no later than July 2008. The surveys will be designed to help determine where and when there are concentrations of marine mammals in the SOCAL Operating Area. The survey will occur over a two year period through July 2010.

b. The Navy is currently working on a program that will enhance its ability to use passive hydrophones on the SOAR Instrumented Range to detect and track marine mammals on those portions of the range where the passive hydrophones are in place. To ensure that these efforts remain focused, Navy will develop an implementation plan and schedule to expand the technical capability of existing hydrophones to detect marine mammals by April 4, 2008. The implementation plan should pro-

vide for completion of prototype classifiers for Cuvier's and Blainesville's beaked whales and visual verification of other small odontocetes detected by passive hypdrophones by April 15, 2009.

c. As part of the SOCAL EIS, the Navy is evaluating a proposal to extend the range areas monitored by passive hydrophones. If Navy decides to extend the area covered by passive hydrophones as part of its ROD for the SOCAL Range Complex EIS, the Navy will determine a timetable for acquisition and installation of additional hydrophones by March 30, 2009.

d. The Navy is evaluating current research regarding infrared (IR) technology for use in collecting data regarding marine mammals, assessing the feasibility of acquiring and deploying additional IR capabilities during major exercises or for conducting surveys, and developing a plan for acquiring and deploying IR in data collection efforts. The plan will be published no later than June 15, 2008.

MITIGATION MEASURES:

The Navy's proposed use of MFA sonar during the Commander THIRD Fleet's proposed nine training exercises (four COMPTUEX and five JTFEX), in the SOCAL Operating Area are based on the current knowledge of the SOCAL Operating Area and the 29 NDE mitigation measures, some of which are more fully described below:

a. The Navy is ensuring that watchstanders and lookouts will include at a minimum: (1) three non-dedicated watchstanders on all surface ships required to look out for marine mammals during all exercises; and

(2) two lookouts on all surface ships required to look out for marine mammals during all exercises. Furthermore, all sightings of marine mammals by all watchstanders and all lookouts are to be reported directly to the Combat Information Center (CIC) or via the appropriate watch stations for submission to the CIC, and the CIC will disseminate the sighting information to all platforms in the area with a recommendation for appropriate action (e.g., power down sonar; surface or subsurface vessels to avoid area or increase distance from mammals; aerial platforms to increase vigilance). Similarly, all aerial platforms will monitor the area for marine mammals during their assigned missions and report marine mammal presence and confirmed sightings to Aircraft Control Unit for submission to the CIC, and the CIC will disseminate the sighting information to all platforms in the area to ensure they are aware of the presence of marine mammals and can take steps to increase vigilance or execute mitigation measures applicable to these exercises (e.g., power down sonar; surface or subsurface vessels to avoid area or increase distance from mammals; aerial platforms to increase vigilance).

b. The Navy is submitting after action reports to NMFS 120 days after the conclusion of any COMPTUEX and JTFEX that contains: (1) an assessment of the mitigation and monitoring measures and how to improve them; and (2) the results of marine mammal monitoring, including all instances where marine mammals were observed and the levels of MFA sonar to which they were exposed, based on the NDE sonar mitigation measures and the requirements of the Biological Opinion dated February 9, 2007.

c. Use of MFA sonar in the SOCAL Operating Area for COMPTUEX and JTFEX training is proposed to occur in W-291 and SOAR (Attachment A). The COMPTUEX and JTFEX training includes three components involving the use of MFA sonar: anti-submarine warfare exercises, submarine operations, and tracking operations. The training exercises in SOAR will occur at least 5 nm way from the western shoreline of San Clemente Island. Aside from San Clemente Island, there are no other islands located within W-291 or SOAR. The Channel Islands National Marine Sanctuary is located entirely outside of W-291 and SOAR. The training area also excludes other islands off of Southern California. For example, Santa Catalina Island and Santa Barbara Island are located entirely outside W-291 and SOAR.

d. The Navy will use meters rather than yards to describe the safety zone set forth in NDE II mitigation measure 20, and the safety zone used in the SOCAL Operating Area will be 1000 meters. The Navy will power down 6dB if a marine mammal is detected within the safety zone. The Navy will power down an additional 4 dB at 500 meters and will shut off sonar transmissions at 200 meters. The remaining features of the safety zone described in NDE measure 20 will remain the same.

CONCLUSION:

The alternative arrangements as presented in this letter and any subsequent notification requirements developed as described above represent appropriate alternative arrangements for compliance with NEPA for the actions taken to respond to this emergency. Alternative

arrangements are limited to those actions necessary to control the immediate impacts of the emergency by providing trained and certified Naval Strike Groups for deployment to combat areas and will remain in effect during the preparation and completion of the SOCAL EIS or until January 23, 2009, whichever is earlier. Applying these alternative arrangements to any other area or exercise would not be appropriate absent an analysis tailored to such other area and exercise.

We are available to review these alternative arrangements in the event there are any concerns, questions or requests for clarification from the Navy, other agencies, and the public. Please do not hesitate to contact me, Ted Boling, CEQ General Counsel, or Horst Greczmiel, CEQ Associate Director for NEPA, regarding the implementation of these arrangements.

Yours Sincerely,

/s/ JAMES L. CONNAUGHTON
JAMES L. CONNAUGHTON

Attachments

A: Chart of the SOCAL Operating Area identifying areas MFA sonar can be used under the terms of the NDE, Biological Opinion and the alternative arrangements.

B: USS Boxer ESG-5, Composite Training Unit Exercise (C2X 06-03), July 2006 and Joint Task Force Exercise 06-04 (JTFEX 06-04) 10-17 Aug 2006, After Action Report.

C: USS Stennis CSG, Composite Training Unit Exercise 06-04 (C2X 06-04), 20 Sept-12 Oct 2006, After Action Report.

D: USS Stennis CSG, Joint Task Force Exercise 07-01 (JTFEX 07-01), 07-16 Nov 2006, After Action Report.

E: USS Nimitz CSG, Composite Training Unit Exercise 07-01 (CSX 07-01), 19 Nov–19 Dec 2006.

F: Department of the Navy Southern California Composite Training Unit Exercise / Joint Task Force Exercise Combined After Action Report, February–March 2007, Final, 28 June 2007.

G: Department of the Navy Southern California Composite Training Unit Exercise 07-7, After Action Report, September 2007, Preliminary Draft CPF Submittal, 04 January 2008 [USS Tarawa Expeditionary Strike Group].

H: United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service Memorandum, subject: Effects of Navy training exercises on marine mammals in and adjacent to the Navy's Southern California Operating Area, dated January 9, 2008.

ATTACHMENT H

[Seal Omitted]

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

[Dated: Jan. 9, 2008]

MEMORANDUM FOR: Conrad C. Lautenbacher, Jr.
Vice Admiral U.S. Navy (Ret.)
Under Secretary of Commerce
for Oceans and Atmosphere

THROUGH: /s/ JOHN OLIVER
JOHN OLIVER
Acting Assistant Administrator for Fisheries

FROM: /s/ JAMES H. LECKY
JAMES H. LECKY
Director, Office of Protected Resources

SUBJECT: Effects of Navy training exercises on marine mammals in and adjacent to the Navy's Southern California Operating Area

We have been asked to review the environmental effects of Navy's request for a Presidential exemption under the Coastal Zone Management Act for Navy's use of mid-frequency active (MFA) sonar during the remaining

Composite Training Unit (COMPTUEX) and Joint Task Force Exercises (JTFEX) scheduled to occur through January 2009 off Southern California. These exercises include 29 conditions, developed in consultation with the National Marine Fisheries Service (NMFS), and adopted as mitigation measures for the purposes of a National Defense Exemption (NDE) under the Marine Mammal Protection Act (MMPA) invoked by the Department of Defense in January 2007.[1]

Generally, we agree with Navy's findings regarding anticipated effects on marine mammal populations likely to be exposed to these exercises. In arriving at this conclusion, we reviewed our Biological Opinion on the exercises (issued February 9, 2007), the 29 conditions adopted in January 2007 as part of the NDE, and the California Marine Mammal Stranding Network database.

Marine Mammals Listed as Endangered or Threatened

During 2006 and early 2007, NMFS and Navy consulted pursuant to section 7 of the Endangered Species Act to assess the effects of these anticipated training exercises on marine mammals listed as endangered or threatened. In consulting on the action, NMFS considered Navy's

[1] The National Defense Authorization Act of 2004 amended the MMPA by inserting an exemption from the moratorium on taking of marine mammals for national defense activities provided the Secretary of Defense determines, after conferring with the Secretary of Commerce, that an exemption is necessary for the national defense. Such exemption may be invoked for a period of up to two years. The Department of Defense invoked the NDE in January 2007 for two years to provide time to process incidental take authorization for its major training ranges pursuant to section 101(a)(5)(A) of the MMPA, 16 U.S.C. § 1371(a)(5)(A).

August 2006 and February 2007 draft Environmental Assessments (final February 2007 Environmental Assessment available at http://www.navydocuments.com) for the training activities and included the set of 29 conditions adopted in January 2007 for the NDE as part of the action.

On February 9, 2007, NMFS issued its biological opinion in which it concluded that Navy's proposed COMPTUEX and JTFEX exercises in waters off the State of California from February 2007 through January 2009 are not likely to jeopardize the continued existence of the threatened and endangered species under NMFS jurisdiction. Species reviewed in the biological opinion were certain baleen whales (blue, fin, sei, and humpback whales), sperm whales, and Guadalupe fur seals.

With respect to baleen whales, their hearing is sensitive in low frequency ranges. While they are likely able to hear MFA sonar, they are not likely to be injured by it. Therefore, while individuals within the baleen whale populations may experience disturbance sufficient to cause temporary movement away from exercise areas, these temporary movements are not expected to result in adverse effects. Information on trends in abundance indicates that baleen whale populations off California are increasing despite the level of human activity in coastal waters of California. While information on trends is not dispositive, it does demonstrate that the history of coastal development, including military training using MFA sonar, has not precluded recovery of these stocks over the last several decades. NMFS' opinion is that the proposed COMPTUEX and JTFEX actions are not expected to appreciably reduce the likeli-

hood for any of the listed baleen whales of surviving and recovering in the wild.

Sperm whale hearing in the range used by MFA sonar is more sensitive than for baleen whales. Sperm whales are deep diving species that forage well below the photic zone and are dependent on echolocation for finding prey. Available information on the effects of MFA sonar on sperm whales is reviewed in detail in the biological opinion. This information suggests that the behavioral responses of sperm whales to anthropogenic sounds are highly variable, but do not appear to result in the death or injury of individual whales or result in reduction in the fitness of individuals involved. In some circumstances, sperm whales respond by swimming away from the sound source, ceasing calling, and changing dive patterns. In other circumstances, no apparent response was noted. As with other marine mammals, behavioral responses to sound appear to be context specific (i.e., is the animal motivated to be in an area and willing to tolerate a sound, is it experienced and knows the sound is not threatening, or is the animal naive and cautiously avoids unfamiliar sound sources). Based on the literature reviewed in the biological opinion, the short duration of any particular exercise, limited geographic scope of each exercise, and employment of mitigation measures, NMFS concluded that the proposed COMPTUEX and JTFEX actions are not likely to adversely affect individual sperm whales in ways or to a degree that would reduce their fitness nor would we expect a reduction in viability of the populations those individual whales represent. Consequently, NMFS' opinion is that the proposed COMPTUEX and JTFEX actions are not expected to appreciably reduce the

sperm whales' likelihood of surviving and recovering in the wild.

There is little information on the response of pinnipeds, such as the Guadalupe fur seal, to sonar. Given the rarity of Guadalupe fur seals in most of the Southern California Operations Area and the results from Navy's modeling exercise using a more common pinniped species, the likelihood that Guadalupe fur seals may be exposed to the MFA sonar employed during COMPTUEX and JTFEX exercises is low. As a result, we conclude that the proposed COMPTUEX and JTFEX exercises are not likely to adversely affect individual Guadalupe fur seals in ways or to a degree that would reduce their fitness, and therefore are unlikely to affect the species' likelihood of surviving and recovering in the wild.

Marine Mammals Not Listed as Endangered or Threatened

While NMFS' biological opinion pursuant to section 7 of the Endangered Species Act evaluated the impacts of the Navy's training exercises on listed marine mammals, the biological opinion did not address the impacts on unlisted marine mammals. (Unlisted marine mammals include the deep-diving toothed whales, such as beaked whales, that appear to be particularly susceptible to injury from MFA sonar). However, NMFS was consulted on the development of the 29 conditions to mitigate impacts on listed and unlisted marine mammals before the Department of Defense invoked the NDE in January 2007. As noted above, these 29 NDE conditions will be part of the COMPTUEX and JTFEX exercises.

Among other things, the 29 conditions provide that watch standers and other key participants in the exercises off Southern California are trained in the identification of marine mammals. This ensures mammals in the vicinity of the exercise are likely to be observed so that various safety measures may be employed. Passive acoustic capabilities will be employed to listen for marine mammals in the training area and at night, lookouts will employ night vision techniques to look for marine mammals in the safety zones. As part of the letters of instructions for each operation. communication measures are implemented to ensure timely communication among all vessels participating in the exercise of the presence of marine mammals and a timely and appropriate response to implement safety measures. These safety measures include safety zones, power down zones, and shut down zones to protect marine mammals from exposure to injurious levels of sound.

Some of the conditions are also being employed to minimize the likelihood of circumstances occurring like those in which MFA sonar has been implicated as a contributing factor in strandings of beaked whales, such as multiple vessels transmitting sonar at the same time in areas characterized by steep bathymetry adjacent to deep water and confined geography with limited escape routes for whales trying to avoid sonar sources. In Southern California, Navy is proposing to conduct most of its sonar activities well off shore where it will not encounter these circumstances. The Navy will avoid areas in which an animal's ability to avoid sonar sources would be limited. These mitigation measures will minimize the likelihood of beaked whales being caught in circum-

stances that characterize known strandings of beaked whales.

While NMFS and Navy continue to review after-action reports and evaluate the effectiveness of various mitigation measures, and NMFS expects that mitigation measures will improve or additional measures may be added as future actions are considered for authorization after the NDE expires, NMFS believes the mitigation measures being employed for the Southern California exercises will reduce the risk of adverse effects to the marine mammals in the area.

Information from strandings

We explored the stranding network database for evidence that historical MFA sonar activities may have been implicated in mass stranding events. Marine mammal strandings in California are common events, but the vast majority is of seals and sea lions. The causes of seal and sea lion strandings are predominately associated with disease, exposure to toxins from harmful algal blooms, and fishery interactions. Strandings also appear to spike during El Niño events when forage species are less abundant. Again, these strandings are predominately pinnipeds. While beaked whales have stranded in Southern California, they are relatively rare events. Between 1982 and 2007, thirteen beaked whales representing four different species (Blainville's, Hubb's, Cuvier's, and Stejneger's beaked whales) stranded from San Diego to Santa Barbara County (California Marine Mammal Stranding Network Database 2006). As with most strandings, the cause of mortality is not always apparent, but for six of these the cause was determinable. Three were disease-related, two were from entan-

glement in fishing gear, and one was from a boat collision. One other animal exhibited a lethal injury, missing tail flukes, which could be attributable to either a vessel interaction or a fishery interaction. The cause of mortality for the remainder was not determinable; however, they stranded individually (as opposed to mass strandings associated with MFA sonar exercises), and they were not coincident with MFA sonar activity.

As noted above, deep diving toothed whales, in particular several species of beaked whales (none of which is listed under the Endangered Species Act), appear to be particularly susceptible to injury, as documented by several mass stranding events in locations other than California in the last several years. The events shared several common factors; among these were steep bathymetry adjacent to islands or other shallow areas, confined geography (e.g. narrow canyons or box canyons), multiple MFA sonar vessels active at the same time, and a strong surface duct (a hydrological condition conducive to sound transmission). However, the mechanism by which MFA sonar appears to be injurious to beaked whales is poorly understood. There are several competing hypotheses but little definitive information is available. While Navy, NMFS, and several other institutions initiated a cooperative investigation of this issue in 2007, an understanding of these whales' behavioral responses to MFA sonar is likely years away. In the meantime, monitoring each event, identifying common contributing factors, and implementing mitigation measures to avoid those circumstances is a reasonable way to minimize risk to this group of marine mammals. In addition, Navy will support stranding network response to any unusual marine mammals stranding events that occur

during or shortly after MFA sonar exercises to facilitate collection of information that might further inform our understanding of the effects of MFA sonar on marine mammals.

Conclusion

For the reasons stated above, NMFS anticipates that the exercises in question are likely to elicit temporary behavioral responses from marine mammals in and adjacent to exercise areas, and that these responses will vary from alerting responses to the sounds, modifications of migration courses to avoid close approaches to sound sources, temporary movement away from sound sources, or temporary cessation of feeding or breeding activities. While there is some potential for injury, NMFS thinks the mitigation measures employed during the exercises will minimize that risk. Therefore, NMFS does not expect the COMPTUEX and JTFEX exercises over the next 13 months to result in adverse population level effects for any of these marine mammals populations.

Pursuant to the NDE, NMFS is continuing to work, as a cooperating agency, with Navy to conduct a thorough environmental review of the effects of these activities in an Environmental Impact Statement, including evaluation of the implementation and the effectiveness of the mitigation measures. NMFS anticipates issuing regulations and a letter of authorization authorizing take of marine mammals incidental to training exercises in Southern California by December 2008. As new information becomes available, including analyses of mitigation measures in after-action reports, NMFS and Navy may modify the mitigation measures currently being

proposed by Navy in the expected December 2008 regulations and letter of authorization.

APPENDIX M

UNITED STATES DISTRICT COURT FOR THE
CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Hearing Date: TBD
Time: TBD
Hon. Florence-Marie Cooper
U.S. District Judge

DECLARATION OF REAR ADMIRAL JOHN M. BIRD IN SUPPORT OF DEFENDANTS' MEMORANDUM REGARDING A TAILORED PRELIMINARY INJUNCTION

I, Rear Admiral John M. Bird, United States Navy, do hereby declare as follows:

I. INTRODUCTION AND QUALIFICATIONS.

1. I graduated from the United States Naval Academy in 1977 with a Bachelor of Science degree in Mechanical Engineering. Subsequently, I earned a Masters of Sci-

ence degree in Engineering Management from Catholic University of America. I have also completed the Massachusetts Institute of Technology Seminar XXI in Foreign Affairs, International Relations and National Security, an educational program for senior military officers, government officials, and business executives in the national security policy community.

2. Upon graduating from the U.S. Naval Academy, I began a career as a submarine officer in the U.S. Navy. Among my operational assignments, I have served on both fast attack and ballistic missile submarines in both the Pacific and Atlantic Fleets. Some of my operational assignments have included service on: *USS Seahorse* (SSN 669), an attack submarine; *USS Simon Bolivar* (SSBN 641), a fleet ballistic missile submarine; *USS Sea Devil* (SSN 664), an attack submarine; and *USS Tunny* (SSN 682), also an attack submarine. My most recent submarine assignment was on the *USS Scranton* (SSN756), an attack submarine, where I served as the Commanding Officer and was awarded the Naval Submarine League's Jack Darby Award for Inspirational Leadership and Excellence in Command. While I was Commanding Officer, the *USS Scranton* also earned the Submarine Squadron Six Battle Efficiency "E" award [1] for two consecutive years in 1994 and 1995. From August 1999 to April 2001, I commanded Submarine Squadron EIGHT (SUBRON EIGHT) which included eight

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[1] The Battle Efficiency "E" is awarded annually to the small number of U.S. Navy ships, submarines, aviation and other units that win their battle efficiency competition. The criterion for the Battle Efficiency Award is the overall readiness of the command to carry out its assigned wartime tasks, and is based on a year-long evaluation. The competition for the award is, and has always been, keen. To win, a ship or unit must demonstrate the highest state of battle readiness.

fast attack submarines stationed in Norfolk, Virginia. SUBRON EIGHT exercises operational control over its fast attack submarines, a function which encompasses responsibility for tactical and operational readiness for war, inspection and monitoring, nuclear and radiological safety, and development and control of submarine operating schedules.

3. Staff assignments I have held include serving as Special Assistant (Legislative Affairs) to the Chief of Naval Personnel; Principal Assistant in the Office of Deputy Chief of Naval Operations for Undersea Warfare (Readiness and Tactics); Joint Chiefs of Staff Division Chief for Central, South and Southeast Asia; Assistant Deputy Director for Political-Military Affairs Asia, also on the Joint Chiefs of Staff; and Director Operations and Plans, Logistics and Engineering, United States Joint Forces Command.

4. From September 2005 to December 2006, I served as the thirty-ninth Commander of Submarine Group SEVEN (SUBGRU SEVEN), where I served as both Commander, Task Force SEVEN FOUR[2] and Com-

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[2] Submarine Group SEVEN is comprised of submarines deployed to the Western Pacific, three submarines homeported in Guam, and a permanently forward deployed submarine tender. The deployed submarines are rotated from their homeports in Bremerton, Washington, San Diego, California and Pearl Harbor, Hawaii for approximately six months. The tender is home ported out of Guam. Additionally, Submarine Group SEVEN has a representative in Guam who liaisons for supply, logistics and repair support for all submarines assigned to Commander Task Force SEVEN FOUR. Commander Submarine Force Seventh Fleet coordinates and controls submarine activities over a vast expanse covering nearly forty-eight percent of the earth's ocean surface, ranging from the Western Pacific to the Indian Ocean. Commander Task Force SEVEN FOUR as Seventh Fleet's submarine move-

mander Task Force FIVE FOUR[3] in Yokosuka. In that role, SUBGRU SEVEN was responsible for supporting operations in the Western Pacific and assumed administrative control over deployed submarines and tenders, reporting to Commander, Submarine Forces Pacific.

5. In December 2006, I reported to U.S. Pacific Fleet, Pearl Harbor, Hawaii to assume duties as Deputy Commander and Chief of Staff and continue to hold that responsibility.

6. I have an intimate understanding and knowledge of Anti-Submarine Warfare (ASW) and tactics. Through my past and present assignments, I am very familiar with the use of Mid-Frequency Active Sonar (MFAS) and the harm that will result to national security if the Navy is unable to conduct required ASW training during the Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Exercises (JTFEX).[4] I am also

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ment advisory authority and operational commander directs all submarine operations and mission tasking requirements in the Seventh Fleet area of responsibility. Commander Task Force SEVEN FOUR is also responsible for staff briefings, reprovisioning and repairs for those submarines operating in Seventh Fleet.

[3] Submarine Group SEVEN was activated as Commander Task Force ONE FIVE SEVEN on 15 October 1992 to direct all submarine operations and mission tasking requirements in the Central Command area of responsibility, including the Red Sea and Arabian Gulf. On 1 July 1995, upon establishment of U.S. Fifth Fleet in that same area of responsibility, Commander Task Force ONE FIVE SEVEN was redesignated as Commander Task Force FIVE FOUR.

[4] A COMPTUEX integrates the deploying personnel and assigned ships, submarines, and aircraft, into an effective fighting force through realistic training, integrating basic skills into a Strike Group team capable of operating in a complicated threat-based scenario environment that simulates real world situations. Anticipated real world situations require the ability to identify and defeat multiple threats including sur-

very familiar with the history and current status of the Navy's extensive mitigation measures put in place so that the Navy can conduct its required training while protecting the natural resources. I have gained this understanding through my extensive at-sea experience on attack and missile submarines, my operational assignments directly relating to ASW, and my staff assignments that were primarily focused on undersea warfare, joint (among services) warfighting capabilities, and foreign political-military issues.

7. The Navy has implemented a variety of marine mammal mitigation measures over the past several years. This declaration describes the genesis and current status of those mitigation measures, and why they are both effective in protecting marine mammals and not so restrictive as to prevent effective Navy training. This declaration traces the history of marine mammal protection measures as implemented by the Navy from before RIMPAC 2006 to the current MMPA National Defense Exemption (NDE II) under which the Navy now operates. The RIMPAC 2006 exercise was the first time the National Marine Fisheries Service (NMFS) had ever issued an Incidental Harassment Authorization (IHA) under the Marine Mammal Protection Act (MMPA) for the use of MFAS for Navy ASW exercises, and the Navy has learned much since then. This declaration will discuss previously employed mitigation measures that have since been modified or eliminated after careful evaluation of both their effectiveness as a marine mammal

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face, air, and most importantly, submarines. A JTFEX is designed to evaluate Strike Group preparedness in a joint and coalition environment for deployed contingency and combat operations.

mitigation measure, and compatibility with training requirements. This declaration will explain how NDE II, the current measures, struck a reasoned balance between environmental protection, military readiness activities, and ultimately National Security. The Deputy Assistant Secretary of the Navy for Environment has stated that, "sonar operations and stewardship of the marine environment are not mutually exclusive goals. The Navy must, and will continue, to operate sonar in a manner that is supportive of our mission to defend the United States and protective of the marine environment."[5] In support of this policy, the NDE II delineated 29 Mid-Frequency Active Sonar (MFAS) mitigation measures (5 personnel training measures, 7 lookout and watchstander responsibility measures, 14 operating procedures, and 3 coordination and reporting procedures) to be used by the Navy during major training exercises. These 29 MFAS mitigation measures were based on analysis and empirical sonar data collected at sea and improved upon measures used since 2004.

8. The Navy is cognizant of the Court's concern over measures employed during RIMPAC 2006, but not carried forward in NDE II. The Navy, therefore, will employ additional measures during the SOCAL exercises that are carefully tailored to provide further protection to marine mammals, while not unduly degrading the quality of MFAS training. This declaration will, finally, address those additional measures in section IX.

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[5] Mr. Donald Shregardus, DASN (I) & (E), U.S. Navy, Letter to the Editor of San Francisco Chronicle, September 12, 2007.

II. SONAR HISTORY

9. SONAR is an acronym for Sound, Navigation and Ranging. It is a method or device for "seeing" underwater to detect and locate objects by either intercepting the acoustic waves of an object's natural-borne sound (passive sonar) or by emitting pulses of sound and receiving the reflecting acoustic waves that bounce off an object as echoes (active sonar). This detection method is analogous to the echo location techniques used by bats, whales and dolphins.

10. Various types of active and passive SONAR are used by the U.S. Navy to identify and track submarines, determine water depth, locate mines, and provide for vessel safety. Passive sonar "listens" for sound waves by using underwater microphones called hydrophones that receive, amplify and process underwater sounds. No sound is introduced into the water by the ship or submarine when using passive sonar. Since passive sonar does not put sound in the water it does not reveal the location of the listening vessel. Passive sonar can indicate the presence, character and movement of submarines. The major disadvantages of passive sonar are that an initial passive detection only provides a bearing (direction) to the object, not an accurate range distance and it must rely upon the target emitting sufficient sound energy at frequencies being monitored at or above decibel levels the sonar system can detect. Active sonar gives both bearing and range and can locate targets emitting levels of energy below those of the surrounding marine environment. Although the Navy is researching improvements in passive sonar, passive sonar does not provide the full capabilities of active sonar systems. For example, passive sonar detection ran-

ges and area coverage to detect a threat submarine are limited compared with active detection ranges and area coverage as illustrated in the graphic below. The surface ship with sonar is in the center of the circle.

11. The red in the circles in the chart on the left (or small line segments if the color is difficult to discern) represents passive detection probabilities against a submerged diesel submarine. The magenta in the circles in the chart on the right (or large rectangle areas) represents active detection probabilities against a submerged diesel-electric submarine. The magenta areas (or rectangular segments if color is not visible within the circles) represent those areas where the MFAS ship has a greater than 50% probability of detecting a submarine. Note that in the right graphic above, MFAS at normal operating power provides a nearly unbroken circle of detection opportunity against the submarine, representing a greatly reduced risk of submarine attack on the surface vessel.

12. Active SONAR systems generally fall into three categories: (1) low frequency (between 0.1 kHz and 1.0 kHz) (LFA); (2) mid-frequency (between 1.0 kHz and 10.0 kHz) (MFA); and (3) high frequency (greater than 10.0 kHz) (HF). Active sonar emits pulses of sound that travel through the water, reflect off objects and return to the receiver on the ship. By knowing the speed of sound in water and the time for the sound wave to travel to the object and back, active sonar systems can quickly calculate distance between the ship and underwater objects.

13. The first SONAR was invented during World War I by British, American and French scientists to locate submarines and icebergs. The U.S. Navy began using SONAR after World War I[6] and by the start of World War II, every naval vessel engaged in antisubmarine activity was equipped with military applications of active and passive sonar systems (*Principles of Underwater Sound*, 3rd ed., Robert Urick, 1983). Since the mid-1950s, remarkable advances have been made in the scientific understanding of underwater acoustics and military application of sonar systems to detecting and tracking quiet diesel submarines. Most of the advances made in sonar technology occurred during the Cold War and continue to this day to counter the growing threat of elusive submarines used by various countries.

14. The development of the current design of Navy MFAS recognized the need for a long-range submarine detection system to counter the Soviet nuclear submarine threat to Navy aircraft carrier Battle Groups (now called "Strike Groups"). The SQS-26 was the ini-

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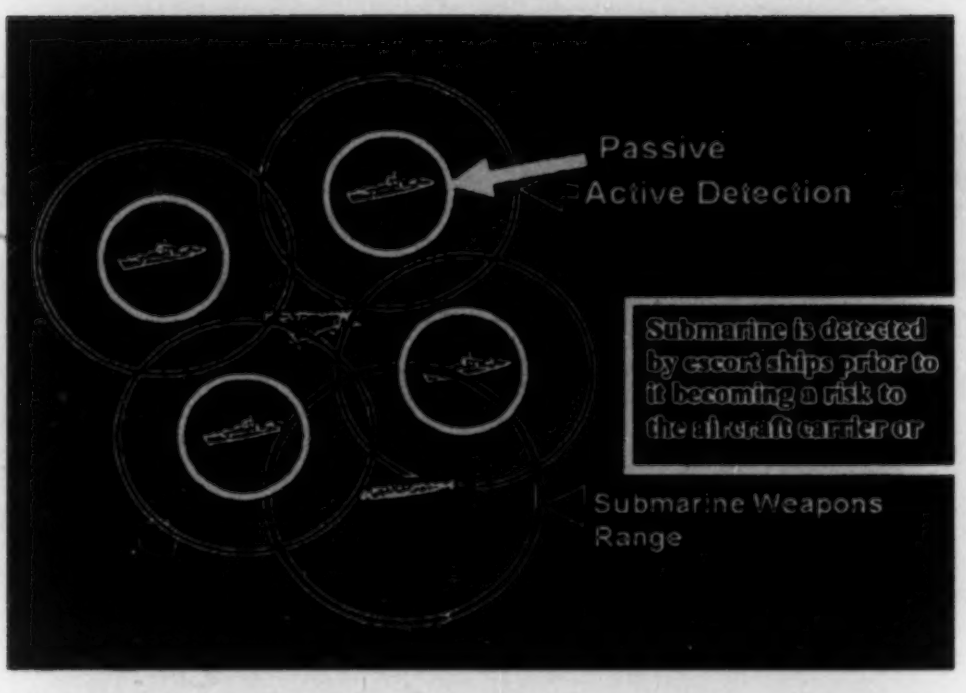
[6] The Navy first installed SONAR on a destroyer in 1927.

tial modern hull mounted SONAR system installed on the Navy's surface vessels starting in the early 1960s after several years of development. After careful research of ocean propagation paths for sound and frequency, power levels for the SQS-26 system were chosen to provide long (>10 miles) active detection ranges. Modern U.S. Navy MFAS sonar systems operate at the same power levels as the SQS-26.

15. Navy analysis of the diesel-electric submarine threat has shown that use of passive SONAR alone is not adequate. Objective assessment data from the Navy's "Ship Anti-Submarine Warfare Readiness Effectiveness Measuring" (SHAREM) program exercises conducted between 1999 and 2006 showed that MFAS system active detection ranges exceeded passive detection ranges in all cases, particularly at ranges at which threat submarines would be able to use their weapons. In other words, shutting sonar off and just listening for threat submarines was far less effective, and places the survivability of a Strike Group at great risk. The following figure illustrates active versus passive detection ranges when multiple ships are operating in a Strike Group as they do when they are on a deployment. The "escort" ships are MFAS ships that are protecting the aircraft carrier, located at the center of the Strike Group. (graphic is on next page)



This depiction is a notional representation of how detection range is used by the Navy without revealing specific Navy tactics or system capabilities, but accurately depicts the limitations inherent in relying upon passive SONAR systems. The goal is to detect the submarine prior to it closing to within its weapons range of the Strike Group ships and aircraft carrier.

16. Many ASW experiments and exercises have demonstrated that this improved capability for long range detection of adversary submarines before they are able to conduct an attack is essential to U.S. Navy ship survivability. Today, ASW is the Pacific Fleet's #1 war-fighting priority. Submarines are operated by numerous navies, including potential adversaries in the Asia-Pacific and Middle East areas (See David Yoshihara's unclassified and classified declarations). U. S. Navy Strike Groups are continuously deployed to these high threat areas. Today's modern, quiet, diesel-electric submar-

ines, operated by navies across the world, pose the primary threat to the U.S. Navy's ability to perform a number of critically necessary missions essential to both peacetime and wartime operations. These missions include being able to access and operate in waters near shore, control strategic maritime transit routes and international straits, and protect sea lines of communications[7] supporting international commerce. Diesel-electric submarines equipped with advanced propulsion systems and quieter exterior coatings can covertly operate in coastal and open ocean areas, blocking U.S. Navy access to combat zones and increasing U.S. vessels' vulnerability to torpedo and anti-ship missile attacks. Detecting, identifying, locating, tracking, and if necessary, holding[8] a diesel-electric submarine at risk is vitally important to the U.S. Navy's ability to conduct operations, accomplish its missions and ultimately prevail in conflict. In preparing for these missions the COMPTUEX and JTFEX are the only opportunities for the thousands of individuals in a strike group to train in a coordinated manner in a realistic environment prior to deployment. If a strike group does not gain proficiency in MFA sonar, and cannot be certified as combat ready, this carries negative national security implications.

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[7] Sea lines of communication refers to primary maritime routes between ports, used for trade, logistics and naval forces. One of the primary functions of the U.S. Navy is to conduct prompt and sustained combat operations at sea. This includes protecting vital sea lines of communication.

[8] "Holding" a submarine "at risk" means to deny enemy submarines an offensive capability by maintaining the ability to destroy them, if and when required.

III. ASW IN SOUTHERN CALIFORNIA (SOCAL) OFFSHORE COMPLEX.

17. In order to be successful at these missions and against the threat of diesel-electric submarines, the Navy has, for more than 40 years, routinely conducted ASW training and Strike Group certification in the waters off the coast of southern California. During this same time period, our understanding of marine mammal neurophysiology and sensory physiology, particularly acoustic, has been markedly enhanced through research conducted in and published throughout the national and international scientific communities. Integrating tactical military requirements with best available scientific understanding of marine mammal physiology and ecology, the U.S. Navy initiated the development and implementation of standard operating protocols to reduce and avoid effects of ASW activities on marine mammals. Coupled with extensive marine mammal awareness training, regulatory reporting and coordination requirements, and investment in scientific, peer-reviewed data, the Navy has safely operated MFAS systems in southern California in conjunction with major range events for decades. A thorough understanding of tactical sonar acoustic propagation characteristics, marine mammal physiology and population ecology, and oceanographic vagaries in the Southern California Bight[9] has been the benchmark of the U.S. Navy's effective mitigation program. Detecting marine mammals in proximity to ASW operations is the key factor for avoiding and/or minimizing effects. As has been documented in recent After Action

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[9] The Southern California Bight encompasses the body of water lying between Point Conception on the Santa Barbara County coast and a point just south of the United States-Mexico border.

Reports in Southern California, the Fleet ASW community consistently applies mitigation measures for marine mammals sighted during ASW training. Implementation of blanket geographic, seasonal, or restrictions on night time ASW training in Southern California as mitigation measures would dramatically reduce the realism of ASW training with severe national security consequences and would afford speculative benefits to marine mammal populations in Southern California waters.

18. The earlier SQS-26 MFAS system, referenced above, used in southern California waters during training beginning in the 1960s, and the current SQS-53 hull-mounted MFAS systems being used today transmit at the same power levels (with nominal sound intensity of 235 dB 1-yard from the source) and frequencies (3.5 Khz). Navy data going back to 1992 shows that the number of yearly exercises in the last 15 years and amount of MFAS use in SOCAL waters was greater in the past than it is now, showing a slight reduction trend. It was likely even greater prior to 1992 because the Navy had more ships homeported in San Diego and more ships that carried MFAS, all of which required training and certification. Another hull mounted MFAS system the Navy uses is the SQS-56 on the Oliver Hazard Perry class Frigates since the late 1970s but it was considered less capable than the SQS-53 because of its power and frequency levels. Accordingly, the new Arleigh Burke class of Destroyers uses the SQS-53. In the 1980s, as documented in reconstruction and analysis reports from the Navy's SHAREM program, there were multiple ships using SQS-26, SQS-53, SQS-56 SONAR systems operating at the same power levels and sound intensity levels that our ships operate at today in Southern California waters and no reported cases of harmful ef-

fects to marine mammals attributed to MFAS use have occurred.

19. Continued use of these MFAS systems during Strike Group training is vital because modern diesel-electric submarines are designed to suppress emitted noise levels specifically to counter and defeat the best available passive sonar technology. Since passive SONAR involves listening for sounds emitted by a potentially hostile submarine in order to detect, localize and track it, because submarines have become quieter through the use of improved technology, and because submarines have learned to "hide" in the naturally occurring noise levels of the shallow waters of coastal environments, the usefulness of passive SONAR systems has greatly diminished. Until it approaches to a very close range, a diesel-electric submarine operating on battery power is nearly undetectable to U.S. and allied naval forces using passive SONAR alone and the Navy has not discovered an adequate replacement for MFAS. Due to increased weapons' ranges of modern submarines, they may not have to place themselves within the limits of passive sonar's ability to detect them. The Navy continues to seek a more effective method to find submarines because using active sonar reveals the transmitting vessel's position.

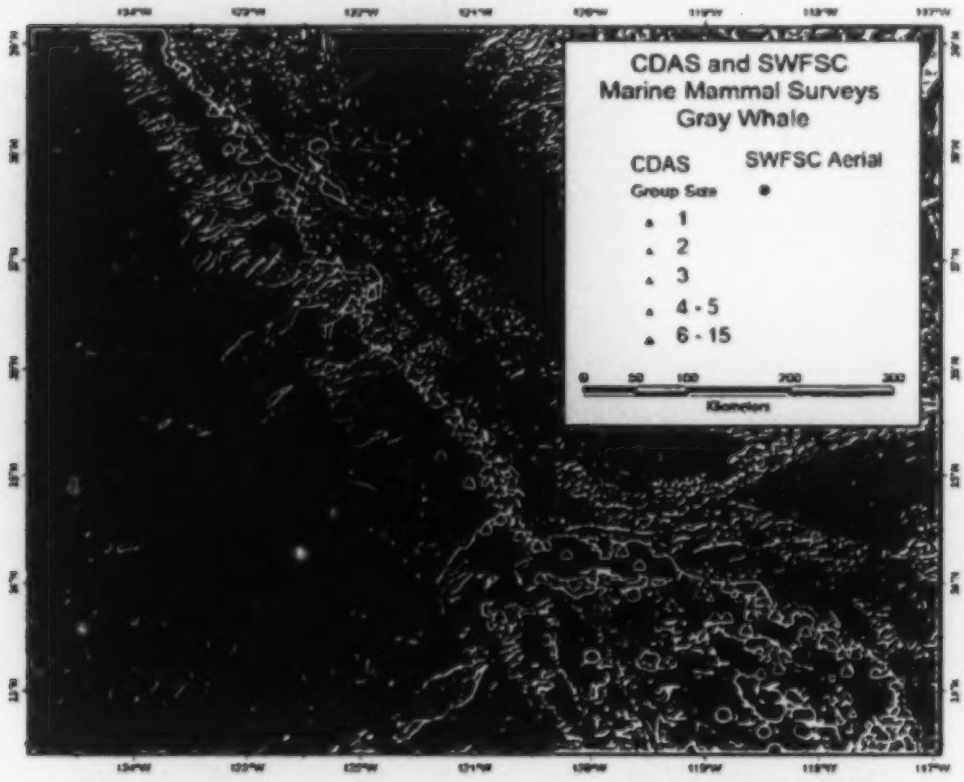
20. The U.S. Navy has homeported a significant percentage of its ships in Southern California (and until the late 1990s, Central California) since the fleet was developed after WWI. Naval ships have trained in Southern California dating back to the 1930s. It is important to note that during the 40 plus years of MFAS operations within Southern California waters at relatively consistent intensity levels, use of MFAS during training was

not mitigated until 2004 and did not result in any observed or documented cases of marine mammal strandings, harassments, or deaths linked to MFAS use. Additionally, there have been no observed behavioral responses attributed to MFAS reported by any third parties or regulatory agencies, including the NMFS. In short, in the past 40 years, there is no evidence of strandings due to behavioral responses, harassments or deaths caused by MFAS.

21. The Navy is aware that various marine mammal species have migrated along the California coast for decades in areas where it routinely trains with MFAS. NMFS and the scientific community acknowledge that the population of eastern North Pacific gray whales has grown since the cessation of West Coast whaling and that migration routes for gray whales have remained virtually unchanged from historic patterns.[10] This suggests that there have been no adverse behavioral impacts from Navy's use of MFAS in Southern California

[10] Angliss, R. P., and R. B. Outlaw. 2007. Alaska marine mammal stock assessments, 2006. U.S. Dep. Commer., NOAA Tech. Memo. NMFSAFSC-168, 244 p; Bonnell, M.L. and M.D. Dailey. 1993. Marine Mammals. IN: pp 604-681 M.D. Dailey, D.J. Reish, J.W. Anderson (eds). Ecology of the Southern California Bight: A Synthesis and Interpretation. University of California Press, Los Angeles; Mate, B. R. and J. Urban-Ramirez. 2003. A note on the route and speed of a gray whale on its northern migration from Mexico to central California, tracked by satellite-monitored radio tag. Journal of Cetacean Research Management 5:155-157; Scammon, C.M. 1874. The Marine Mammals of the North-western Coast of North America, Described and Illustrated: Together With An Account Of The American Whale-Fishery. Reprint in 1968 by Dover Publications, new York. 319 pp.

waters. The following graphic shows recent surveying of gray whales.[11]



Of note is that the thick cluster of aerial sightings in the lower right is surrounding San Clemente Island, whose nearby waters contain an instrumented undersea Navy ASW range. After four decades of operations, the whales continue to traverse waters frequently used for Navy sonar exercises.

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[11] NCCOS. 2005. Biogeographic assessment of the Channel Islands National Marine Sanctuary: A Review of Boundary Expansion Concepts for NOAA's national Marine Sanctuary Program. NOAA National Centers for Coastal Ocean Science Biogeography team in cooperation with the National Marine Sanctuary Program. Silver Spring, MD. NOAA Technical Memorandum NOS NCCOS 21. 215 pp.

IV. MID-FREQUENCY SONAR TRAINING IN ALL ENVIRONMENTAL CONDITIONS IS VITAL

22. One of the Navy's key operational objectives is to hold adversary submarines at risk [12] by maintaining the ability to destroy them, if and when required, at a time and place of the Navy's choosing. Fundamental to this objective is knowing where they are operating at all times and understanding their intentions and capabilities through their actions.[13] The time period leading up to actual hostilities is the most difficult and strenuous for Strike Groups during training because they must constantly ensure they reduce the risk to themselves should the submarine engage in an unexpected hostile act. They counter this challenge by using MFAS to detect, identify and classify a submarine and its actions which provide insight into its intentions. MFAS provides the greatest detection ranges and areas over which submarines can be detected. The Strike Group must also maintain contact and ensure that the movements of the Strike Group ships do not place them in a position where the submarine can harm them. But, as modern diesel submarines of potential adversaries have become exceedingly quiet and more difficult to detect by passive means, realistic and repetitive ASW training with active SONAR is necessary for our forces to be confident and knowledgeable in the Navy's plans, tactics, and procedures to perform and survive in situations leading up to hostilities as well as combat.

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[12] See note 2.

[13] The Classified declaration of Mr. David Yoshihara and the unclassified declaration of Captain Martin M. May, USN explain further the current national security concerns necessitating the continued use of MFAS SONAR in JTFEX and COMPTUEX training.

23. MFAS training is required year round in all environments, to include during night and low visibility conditions, and in southern California offshore waters which realistically portray the bathymetric features where diesel threats can hide and present significant detection challenges. ASW occurs over many hours or days. Unlike an aerial dogfight, over in minutes and even seconds, ASW is a cat and mouse game that requires large teams of personnel working in shifts around the clock to work through an ASW scenario. Also, MFAS training at night is vital because environmental differences between daytime and nighttime affect the detection capabilities of active SONAR. The ambient noise levels are higher at night because many species use the nighttime period for foraging and movement. Temperature layers, which affect sound propagation, move up and down in the water column from day to night. Consequently, personnel must train during all hours of the day to ensure they identify and respond to changing environmental conditions. An ASW team trained solely during the day cannot be sent on deployment and then be expected to fight at night because they would not identify and respond to the changing conditions. On-the-job training in combat is the worst possible way of training personnel and places both the Strike Group and the success of the military mission at significant risk.

24. Maneuvering a vessel at night and during restricted visibility is not a "simple" activity. In the International Navigation Rules of the Road, periods of fog, mist, falling snow, heavy rainstorm, sandstorms, or any similar events are referred to as "restricted visibility."[14] In

[14] International Collision Regulations (72 COLREGS) as codified in 33 U.S.C. Sections 1601-1608.

restricted visibility, all mariners, including Navy vessel crews, are required to maintain proper look-out by sight and hearing as well as "by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision."[15] Therefore, Navy vessels are required to use all means available in restricted visibility, including SONAR and positioning of additional lookouts for heightened vigilance to avoid collision. Navy vessels use radar and night vision goggles (as already noted in current National Defense Exemption (NDE II) mitigation) to avoid any object, be it a marine mammal, a periscope of an adversary submarine, trash, debris, or another surface vessel. Prohibiting or limiting vessels from using MFAS during periods of restricted visibility therefore violates international navigational rules, increases navigational risk, and jeopardizes the safety of the vessel and crew.[16]

V. MID-FREQUENCY ACTIVE SONAR TRAINING AT DIFFERENT POWER LEVELS.

25. Active SONAR detection ranges decrease as power is reduced and make the Strike Group more vulnerable to attack. This is illustrated in the figure on the following page:

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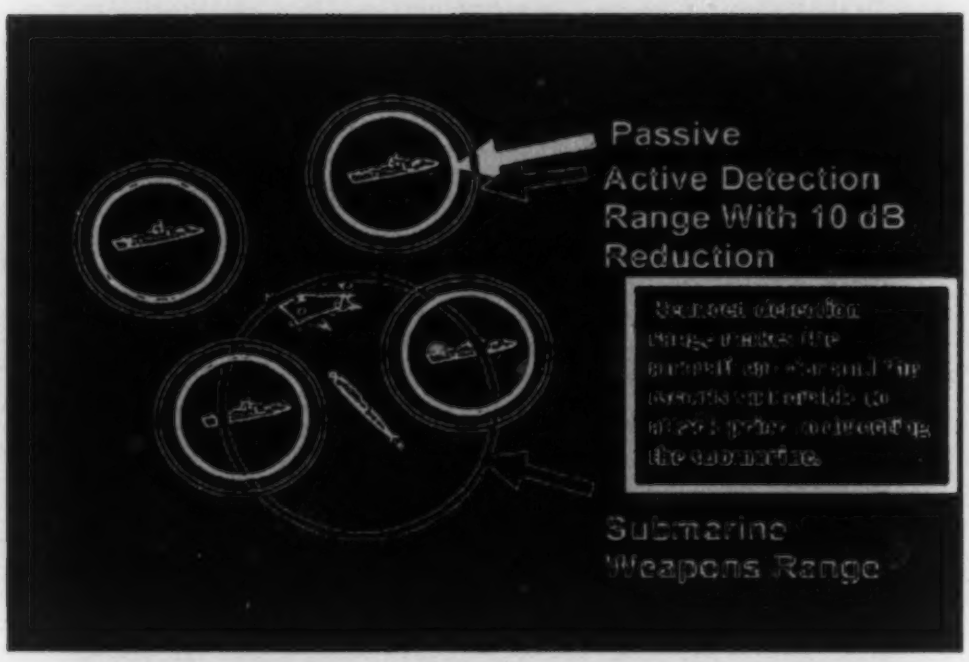
[15] Rule 5, COLREGS.

[16] Active SONAR is a very effective means for detecting surface vessels and their exact range from the transmitting vessel and is therefore effective at helping to prevent collisions at sea.



If the Navy maintains the same formation, it cannot assess its real vulnerability and capability gaps during major exercises. The submarine can make an attack on the aircraft carrier without being detected by the carrier's protective escorts.

26. Reducing transmit power levels of SONAR, as suggested by the above graphic, compromises training by removing the opportunity for a SONAR operator to detect, track and hold an enemy submarine. When a submarine is in the path of a transmitting SONAR beam, the intensity of the reflected sound measured some distance away will depend directly upon the intensity of the sound striking the submarine. Therefore, the higher the decibel level of the SONAR system of the transmitting vessel, the stronger the returned echo from the submarine and the higher the likelihood that a SONAR operator will be able to detect a return on a SONAR system display. Training Sailors to use

reduced MFAS power levels not only reduces the opportunity to detect, track and hold objects, but it also exposes them to unrealistically lower levels of mutual interference[17] caused by multiple SONAR systems operating together by the ships within the Strike Group. As a consequence of the above illustrated situation, the submarine successful attack rate against the aircraft carrier will be artificially high, but by an unknowable amount. There will be less detection and classification data to assess Fleet readiness. This will result in not knowing how proficient the Navy's ASW forces really are and what skills require improvement. Because submarines would be much more difficult to detect in training, another effect of training with reduced power is that Navy surface ships would have less opportunities to practice attacking submarines. Over time, operating under reduced power would condition the Sailors to expect conditions that they would not experience in a real world combat situation and would not allow them to train the way they would be expected to fight, resulting in an increased risk to the Strike Group's ability to survive.

27. Alternatively, trying to alleviate the risk identified in the previous figure by directing the ships to move closer together would only hinder rather than help the situation. The figure on the following page identifies the heightened risk in doing this:

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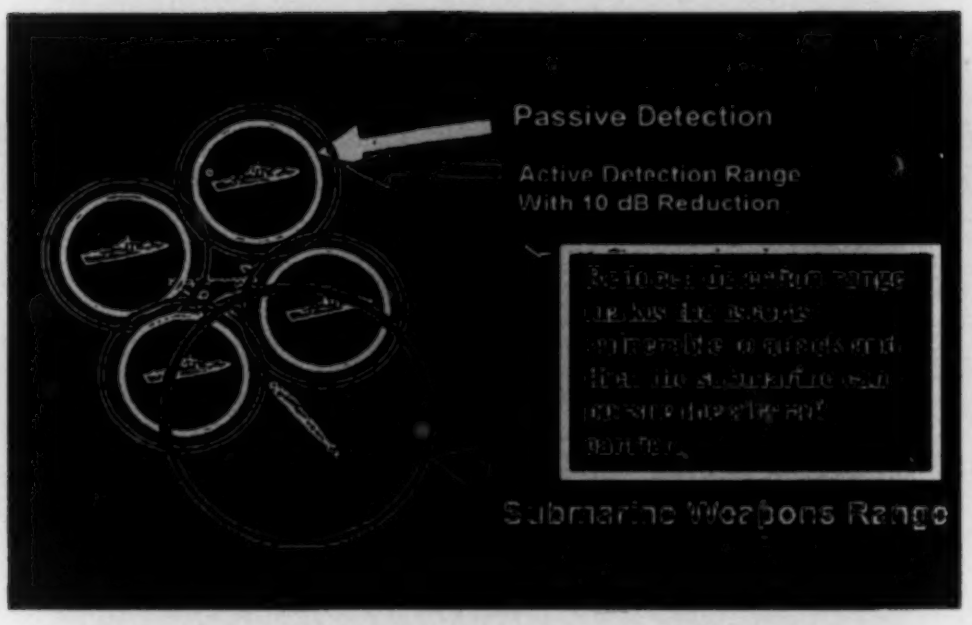
[17] Mutual Interference is caused by a transmission of one ship sonar system being received unintentionally by another ships system.



Even collapsing the formation to compensate for operating under reduced power will not allow protection of the aircraft carrier. The destroyers will be attacked prior to detecting the submarine. The submarine will then be free to destroy the aircraft carrier.

28. This illustration does not fully reflect the actual conditions in a warfare environment because submarines would not be the only threat. Strike Groups must also be positioned and trained to defend against possible threats on the surface and air. For example, collapsing the formation to compensate for reduced sonar operating levels may not allow for adequate anti-air defense by the escorts against enemy aircraft. It may not also allow the Strike Group to counter weapons released from other naval vessels attacking the Strike Group. But, even if the Navy could collapse the formation, it does not help in this case because the submarines' weapons range exceeds the range at which it can be detected using active SONAR by the escort ships. So with reduced SONAR power, the submarine is free to shoot the escorts first,

and then the aircraft carrier. The "reach" of the submarine's weapon is greater than the "reach" of the escorts' SONAR, placing the survivability of the Strike Group at risk and once again training the Sailors in a different manner than they would be expected to conduct combat operations.

29. The graphic below contains range rings and rectangular shaped sectors that illustrate the difficulty in detecting a modern diesel-electric submarine at a given range when sonar power levels are reduced. The surface ship with sonar is in the center of the circles.

Detection area with power level at 235 dB	Detection area with reduction of 6 db (229 dB)	Detection area reduction of 10 dB (225 dB)

The magenta areas (or rectangular segments if color is not visible within the circles) represent those areas where the MFAS ship has a greater than 50% probability of detecting a submarine. Decreasing SONAR power results in drastically reduced levels of probability of detection, resulting in a greater likelihood that the submarine will either escape or successfully attack the Strike Group. Although a 6 dB reduction appears small, it is actually a 75 percent power reduction and a 10 dB reduction is a 90 percent power

reduction. The reason is that decibel levels are on a logarithmic scale, not a linear scale. While seemingly minor, a 6 dB reduction results in a power level only 25 percent of the original power. Passive sonar provides very little opportunity for detecting the submarine until it is very close, representing a potentially high risk of submarine attack on the surface vessel, but note in the left graphic above that MFAS at normal operating power provides a nearly unbroken circle of detection opportunity against the submarine, representing a greatly reduced risk of submarine attack on the surface vessel.

VI. HISTORY OF NAVY MITIGATION MEASURES

30. In order to understand the mitigation that the Navy currently imposes upon its Fleets, it is important to understand the Navy's history with regards to protective measures. The Navy historically has used protective measures developed through scientific research to ensure its training reduces the possibility of harm to marine mammals but also permits effective training. Navy policy expressed in December 2000 tasked Fleet Commanders to take a programmatic approach to environmental compliance in at-sea ranges and operating areas. In parallel with Navy's programmatic approach, the Fleets implemented certain protective measures during SONAR and non-SONAR activities as briefly described below.

A. Protective Measures Assessment Protocol (PMAP)

31. In October 2004, the Navy instituted Protective Measures Assessment Protocol (PMAP). PMAP is a computer-based tool that provides commanding officers

with environmental situational awareness and recommends protective measures that are to be implemented during routine unit level training that occurs in outside of established Department of Defense maritime ranges and established operating areas. The tool provides marine resource protective measures for 17 specific, routine training and exercise activities that have been developed to maximize the Navy's protection and conservation of important marine resources. The 17 specific training/exercise events include torpedo exercises involving use of MFAS, helicopter dipping SONAR training operations, and ship and submarine MFAS usage.

32. Specifically, PMAP requires special consideration of whether to halt MFAS training when the following conditions are encountered in aggregate: strong surface duct, significant bathymetry (composed of steep or complex features such as continental shelf break, seamounts and canyons), the use of multiple MFAS systems over an extended period of time, and constricted channels or limited egress for marine mammals.[18] If training in these aggregate conditions is necessary, a vessel is required to obtain higher approval via the chain of command.

33. Further, trained lookouts are required to survey for marine mammals prior to activity commencement and during any MFAS exercise. Submarines are required to use passive acoustic means to monitor for the presence of marine mammals. PMAP also contains power down mitigation measures when marine mammals are detected close to the vessel. As part of PMAP, Navy implemented safety zones based on research that deter-

[18] The factors are currently included in aggregate as a specific measure to protect beaked whales under the current Marine Mammal Protection Act National Defense Exemption II, measure # 26.

mined the onset of Temporary Threshold Shift (TTS) occurred at about 195 dB.[19]

B. RIMPAC in General

34. RIMPAC is a unique training event. With the Rim of the Pacific (RIMPAC) Exercise conducted biennially in the Hawaiian operating area, the United States Pacific Fleet, which is responsible for the Third Fleet and the Seventh Fleet, seeks to enhance interoperability[20] between Pacific Rim armed forces, as a means of promoting stability in the region to the benefit of all participating nations.

35. RIMPAC is different from JTFEX and COMPTUEX conducted offshore of southern California in many important ways. RIMPAC is not an exercise integral to the Fleet Response Training Plan (FRTP), like JTFEX and COMPTUEX. The FRTP is a process that is designed to fulfill the Chief of Naval Operation's obligation under Section 5062 of Title 10 of the U.S. Code, which requires organization, training and equipping of all naval forces for combat. The FRTP is an arduous training cycle that ensures U.S. forces achieve the highest possible readiness levels prior to deployment. As part of the FRTP, conducting JTFEX and COMPTUEX aligns Navy capabilities and missions in support of combatant commander and Navy requirements. Both

[19] Research later published in Finneran, J.J., D.A. Carder, C.E. Schlundt and S.H. Ridway, 2005. Temporary threshold shift in bottlenose dolphins (*Tursiops truncates*) exposed to mid-frequency tones. Journal of the Acoustical Society of America. 118:2696-2705.

[20] "Interoperable" means that the commanders and units of all the forces must be able to communicate effectively, understand the capabilities and limitations of each others' forces, and be able to execute the tactics and common doctrine quickly and precisely.

JTFEX and COMPTUEX, unlike RIMPAC, are part of the integrated phase of training for U.S. and some allied forces, which requires a synthesis of unit and staff actions into a coordinated Strike Group necessary for surge and readiness certification. RIMPAC does not fit into any of the defined progressive levels of graduate level ASW training for Navy forces because of RIMPAC's unique multi-national training focus. The RIMPAC exercise is focused on command and control among the nations involved, and not focused on certifying Strike Groups for deployment. RIMPAC offers the only opportunity for military forces from both the Western and Eastern Pacific to train together in scripted, but realistic, hostile scenarios, and in that regard is a vital training exercise. For these reasons, equating what was done in past RIMPAC exercises for purposes of mitigation, to what mitigation should be done in upcoming JTFEX or COMPTUEX off Southern California does not make sense, as is explained more thoroughly below.

C. RIMPAC 2004

36. Even before the NRDC lawsuit challenging RIMPAC 2006, the Navy independently chose to require science-based protective measures by all U.S. participants in RIMPAC 2004 through an operational order (and Navy had also started requiring protective measures in PMAP, discussed above). Those measures were to be followed to the maximum extent practicable.

37. Surface and submarine vessel protective measures required observers to visually survey for and avoid operating active SONAR when sea turtles or marine mammals were observed.

38. Both submarines and surface vessels were to monitor acoustic detection devices for indications of close aboard (which means risk of collision or near collision exists) marine mammals (high bearing rate biologic contacts). When a surface vessel or a submarine conducting active SONAR training detected a marine mammal close aboard, the vessel was to reduce maximum SONAR levels. Particularly, when a marine mammal was detected by any means within 600 feet (183 meters) of the SONAR dome, the ship or submarine was to limit active transmissions at least 4db below their equipment maximum for sector search modes. Then the submarine or ship was to continue to limit the maximum transmission levels by this 4dB factor until the marine mammal was no longer within 600 feet (183 meters) of the SONAR dome.

39. If the marine mammal was detected by any means within 300 ft (92 meters) of the SONAR dome, the principal risk to the mammal changed from acoustic harassment to potential physical collision. Therefore, ships and submarines were directed to maneuver to avoid collision and follow standard whale strike avoidance procedures.

40. If a seal was detected by any means (sight or sound) within 1,050 feet (320 meters) of the SONAR dome, then the ship or submarine was to limit active transmission levels to at least 4 dB below equipment maximum for sector search mode. Then the ship or submarine was to continue to limit maximum power levels by this 4 dB factor until the ship or submarine determined that the seal was no longer within 1,050 ft (320 meters) of the SONAR dome.

41. For dolphins only, if after conducting an initial maneuver to avoid close quarters with dolphins, the ship or submarine concluded that dolphins were deliberately closing on the ship to ride the vessel's bow waves, no further mitigation actions were necessary. While in the shallow wave area of the vessel near the bow, dolphins are out of the main transmission axis of the mainframe active SONAR and are exposed to significantly lower power levels.

42. Aircraft protective measures included helicopters observing and surveying the intended exercise area for marine mammals and sea turtles for 10 minutes before dipping active SONAR transducers in the water. Additionally, helicopters were also required to not dip their active SONAR transducer within 600 feet (183 meters) of a marine mammal or sea turtle. Then, if a marine mammal or sea turtle was detected while a helicopter had its SONAR dipped and pinging, the SONAR pinging would be halted if a marine mammal or sea turtle was located closing within 150 feet (46 meters).

43. The measures used in RIMPAC 2004 (July) resulted in sound exposure received levels of 185 dB at 600 feet and provided mitigation based on the state of marine mammal science at the time.

D. RIMPAC 2006

44. In June 2006, in preparation for RIMPAC 2006, the Navy obtained the first Incidental Harassment Authorization (IHA) from National Marine Fisheries Service (NMFS) related to SONAR use in naval training activities, pursuant to the Marine Mammal Protection Act. The measures contained in the RIMPAC IHA were unprecedented in their scope. Per the IHA, the Navy

prepared an After Action Report analyzing the operational and environmental effectiveness of the IHA measures. That After Action Report analyzed the effectiveness of measures common to both the RIMPAC IHA and the NDE I.

45. Because of the unique nature of RIMPAC in general, as discussed above, the mitigation measures did not compromise the primary objectives of RIMPAC: multinational coordination and interoperability. But, as the RIMPAC 2006 After Action Report made clear, the use of some of these mitigation measures compromised realistic ASW training. This analysis is discussed in detail below.

E. National Defense Exemption I (NDE I)

46. The MMPA allows the Secretary of Defense, in consultation with the Secretary of Commerce, to exempt from the MMPA actions that are necessary for the national defense. Three days after issuance of the IHA, the Deputy Secretary of Defense issued National Defense Exemption I (NDE I), exempting all non-RIMPAC MFAS activities from the MMPA's permitting process for a six month period. In seeking the exemption, and as part of its terms, the Secretary of Defense worked with NMFS to develop mitigation measures that were to be followed when using mid-frequency active SONAR during the 6 month period of the exemption. The effectiveness of the measures and their operational impact was not fully known prior to their adoption. Therefore, NDE I represented an effort to increase protection of marine mammals while ensuring ASW training was not sacrificed. It did so through mitigation measures which would be reviewed and developed with operational evaluation and input during the six

month period of use. The measures contained in NDE I required the following:

a. Shipboard lookouts were required to be qualified watchstanders who completed NMFS-approved Marine Species Awareness Training (MSAT);

b. Ships and surfaced submarines were required to have personnel on lookout with binoculars at all times while the vessel was moving through the water, who were to maintain surveillance of the area visible around the vessel and to report the sightings of any marine species disturbance to the water's surface, or any object, to the Officer in Command. Such lookout personnel were to have completed the marine species awareness training, and at least one person with the training was to be present and on watch at all times during operation of tactical mid-frequency SONAR, on each vessel operating mid-frequency SONAR;

c. Aviation units participating in ASW events were to conduct and maintain, whenever possible, surveillance for marine species prior to and during ASW events, and to report sightings immediately to the ships in the vicinity of the event;

d. Ship and submarine SONAR operators were to check for passive indications of close aboard marine mammals prior to commencing ASW operations involving mid-frequency SONAR, and were to operate SONAR at the lowest practicable level, not to exceed 235 dB, except for occasional short periods of time to meet tactical training objectives. Use of MFA SONAR at source levels above 235 dB was to be logged and reported;

e. The Navy did not intend to, and the IHA did not permit, use of MFA SONAR within 25km of the 200-m isobath during RIMPAC 2006 except during choke point exercises and on the Pacific Missile Range Facility. Therefore, such a measure was agreed to as an exclusion zone measure. But, in major fleet exercises other than RIMPAC 2006 for which NDE I applied, MFA SONAR was restricted within 12nm of a coast, except at established ranges that were clearly within 12 nautical miles such as the ranges at San Clemente Island and Pacific Missile Range Facility. Additionally, NDE I prohibited operation of MFA SONAR in constricted channels except during choke point exercises, which required additional mitigation.

f. NDE I established safety zones requiring reduction of MFA SONAR power levels when marine mammals were detected within a certain range. For helicopters, if a marine mammal was within 200 yards of the SONAR transducer, then the SONAR transducer would not be dipped or if already dipped, any pinging would be stopped. For ships and submarines, if a marine mammal was within 1,000 meters of the SONAR dome, the ship or submarine was to decrease SONAR transmissions by 6 dB below its normal operating level. The reduced transmission was to continue until either the animal had been seen to leave the area, had not been seen for 30 minutes, or the vessel had traveled more than 2,000 meters beyond the location of the sighting.

If a mammal was detected within 500 meters of the SONAR dome, the transmitting level was to be reduced by 10 dB below its normal operating level until the animal had been seen to leave the area, had not been seen for 30 minutes, or the vessel had traveled 1,500 meters

beyond the location of the sighting. If the mammal was detected within 200 meters of the SONAR dome, active SONAR transmission was to cease completely and the vessel was to maneuver to avoid the animal. SONAR use was not to resume until the animal was seen to leave the area, had not been seen for 30 minutes, or the vessel had traveled more than 1,200 meters beyond the location of the sighting. The above safety zone distances were increased if significant surface ducting were present, to a 6 dB decrease in transmission at 2,000 meters, a 10 dB decrease in transmission at 1,000 meters, and cessation of use at 500 meters. In low visibility conditions, reduction in transmission levels were to occur based upon the ability to detect marine mammals within the standard safety zone distances. In other words, if visibility prevented detection of mammals out to the prescribed safety zones, Navy was required to power down as if mammals were present in the zones they were unable to see;

g. Any choke point exercises required additional coordination with NMFS, one Navy observer dedicated to detecting marine mammals per ship, and monitoring of the choke point areas before, during, and after the exercise;

h. The Navy was to coordinate with the NMFS Stranding Coordinator for any unusual marine mammal behavior, and to provide an After Action Report to NMFS assessing the effectiveness of mitigation and monitoring measures, and the results of the monitoring.

These measures, adopted from the NMFS IHA, were analyzed by the Navy Fleets along with the RIMPAC measures within the RIMPAC 2006 After Action Report to inform the eventual decision to seek a second National Defense Exemption upon NDE I's expiration.

Certain NDE I mitigation measures restricted Navy's ability to conduct training necessary for operational requirements.

F. National Defense Exemption II (NDE II)

47. Following RIMPAC 2006, NMFS and Navy analyzed the 2006 RIMPAC After Action Report to determine which mitigation measures were effective. NDE II, issued in January 2007 after the consultation with NMFS, contained 29 mitigation measures. Many of the NDE I measures were incorporated in NDE II, in principle or in some cases in the same language, because they were determined to be effective based on RIMPAC 2006 analysis. Additional measures were added to NDE II, including training for officers, additional passive monitoring, requirements to use all available sensors and optical systems, and requirements for more specific training and techniques for night lookouts. Additionally, another measure was added (measure #26 of NDE II) recognizing that a confluence of conditions in the aggregate (rapid bathymetry differences, multiple ships active in the area for extended time in close proximity to one another, near land masses separated by less than 35 nautical miles and at least 10 nautical miles in length, significant surface ducting) may contribute to marine mammal stranding, particularly beaked whales. The mitigation measures contained in NDE II were developed with the benefit of the After Action Report from the 2006 RIMPAC exercise, which provided specific data on the estimate of the number of marine mammals affected by RIMPAC ASW based on (1) both the model results of real-time exercises and sightings of marine mammals; (2) an assessment of the mitigation and monitoring measures with recommendations on how to improve them;

(3) results of marine species monitoring; and (4) as much unclassified information as the Navy could provide regarding when and where SONAR was used so it could be coordinated with observed cetacean behaviors. When finally implemented, NDE II incorporated those measures set forth in the 2006 RIMPAC IHA that were shown to be effective. Therefore, NDE II was better suited to allowing maximum effective Navy training while still preserving and protecting marine species because it was based on Fleet input from actual training observations and conclusions and because it was based on additional scientific analysis by NMFS and the Navy. With use of NDE II, no known strandings or scientifically measured harm have occurred, therefore the mitigation methods have been shown effective.

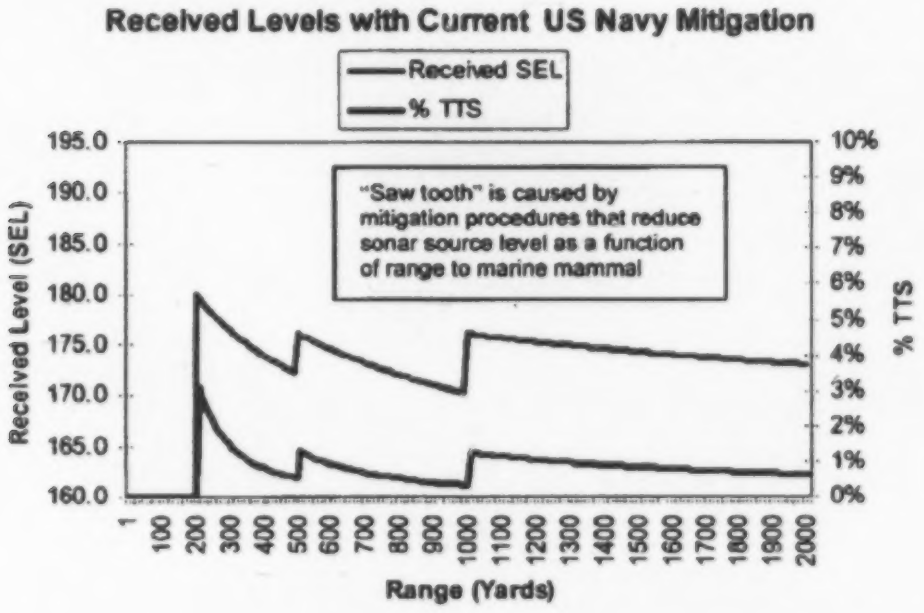
48. One of the NDE II measures includes a power down or safety zone scheme. The scheme is substantially identical to NDE I, except that the NDE II distances are defined in yards, rather than meters. The Navy made this revision because United States sailors routinely measure distances at sea in terms of yards and nautical miles rather than in meters or kilometers. The NDE II scheme, therefore, requires powering down of at least 6 dB below normal levels when any marine mammal is detected within 1,000 yards of the SONAR dome. The ship is required to maintain the reduced level of transmission until the mammal has been seen to leave the area, has not been detected for 30 minutes, or the ship has transited 2,000 yards beyond the location of the last detection. If a marine mammal is detected within or closing to within 500 yards, the SONAR transmissions are to be reduced to at least 10 dB below the normal operating level and shall be maintained at that lower level until the same requirements above are met. SO-

NAR operation is to cease if the mammal is detected within or closing to within 200 yards of the SONAR dome.

49. Reduction of SONAR power levels by 6 dB to 10 dB results in a 50 to 80 percent reduction of detection of submarines in the area due to a decrease in power of 75 to 90 percent, resulting in a ship's crew not learning of its capabilities and not learning how to use its sensors when required to counter a submarine threat as discussed in more detail, with graphics, above. Reduction of SONAR power levels results in an inability to detect submarines at greater distances than reflect real world situations, as submarines are capable of striking ships at distances greater than a powered-down SONAR would be able to detect.

50. The illustrated graphic below this paragraph demonstrates that current NDE II measures provide an adequate safety margin to marine mammals and allows for effective realistic ASW training. More restrictive power reduction and safety zone schemes, however, do not show appreciable further protection of exposure levels of marine mammals to MFAS but greatly reduce the ability of the sonar to detect submarines. The Temporary Threshold Shift (195 dB) is a scientifically measured, peer-reviewed value that identifies a causal relationship between MFAS exposure level and a temporary harm to marine mammals. A temporary diminishment of hearing acuity is associated with a received underwater sound exposure level (SEL) of 195 dB. NDE II mitigation procedures are not expected to expose marine mammals to more than 179 dB at 200 yards. For a 1 second pulse, this is just about 3% of the SEL associated with a temporary reduction in hearing acuity,

meaning the mammal only receives 3% of the energy required to cause temporary harm. Therefore, the Navy's power-down mitigation measure includes a significant safety margin.



Maximum received level (top line) to which a marine mammal would be exposed using NDE II mitigation procedures is 179 dB. This occurs just outside the 200 yard shutdown range. The maximum received level just before 6 dB power down at 1000 yards is 175 dB and the maximum dB just before 10 dB power down at 500 yards is 175 dB. At the 500 and 200 yard points, the primary concern is not behavioral disturbance (because the animal is not likely being disturbed and may be drawn to the sonar ping), but the potential for injury due to exposure to MFA sonar or vessel strike. The 500 and 200 yard measures have a large safety margin to prevent injury. NDE II mitigation procedures allow a maximum single ping exposure of about 2.5% (or about 1/40) of the

amount of energy (bottom line above) known to cause the onset of temporary diminished audio acuity in some marine mammals. Placed in perspective, the level to which the Navy already mitigates (169 dB when reducing 6dB at 1000 yards) is even lower than humpback whale's vocalization at 190 dB (.4 to 4.0 kHz frequency). Marine mammals are often exposed to higher sound levels in their own communications.vessel.

VII. NAVY ANALYSIS OF RIMPAC 2006 AND NDE I MITIGATION MEASURES THAT HAVE BEEN MODIFIED

51. This section will explain why previous measures used during RIMPAC 2006 and NDE I are either modified or no longer used.

A. Enlarging Safety Zones Because of Strong Surface Ducting

52. Surface ducting is a condition when water conditions (*e.g.*, temperature layers, lack of wave action) result in sound energy emitted at or near the surface to be refracted back up to the surface, then reflected from the surface only to be refracted back up to the surface so that relatively little sound energy penetrates to the depths that otherwise would be expected. This increases active sonar detection ranges in a narrow layer near the surface, but decreases active sonar detection below the thermocline[21]—a phenomenon that submarines have long exploited. Training in surface ducting conditions is critical to effective training because sonar operators need to learn how sonar transmissions are altered due

[21] The transition layer between the mixed surface layer of the ocean and the deep water layer, where temperature changes rapidly with depth.

to surface ducting and how submarines may take advantage of them. Measurements of surface ducting taken during RIMPAC 2006 indicated a large variation in the presence of strong surface ducts over relatively short distances. The models used in forecasting a strong surface duct used high resolution that still resulted in generalized sea state, sound Speed Velocity Profile (SVP) and cloud cover over a large operational area covered by exercise participants. Therefore, these measured location variations so differ from forecasts that concluding whether a strong surface duct existed was inherently inaccurate. Additionally, the measure failed to account for location variations from tidal flux, differential sea states that are frequently seen in channels, the fact that there are shear lines[22] in some locations, and the occurrence of currents and eddies. Variations due to these characteristics have significant effects on surface ducting. Because there is no evidence that surface ducting in and of itself causes MFAS overall effects to marine mammals to be greater, and because it is scientifically unknown to what extent the presence of surface ducting was significant in the known beaked whale stranding incidents, the RIMPAC After Action Report recommended omitting this separate measure for NDE II. Navy still considers significant surface ducting in the current NDE II measure #26 as one condition of an aggregate of many conditions (land masses surrounded by less than 35 nm and at least 10 nm in length, areas of rapid bathymetry change from 1000-6000 meters within short horizontal distance (5nm), and where multiple ships

[22] For example, the Hawaiian Islands present obstacles to the northeasterly trade winds, creating calm regions in the leeward (downwind) side of the islands. Sharp horizontal shear lines usually separate the trade winds and heavy seas from the calm regions.

(greater than 3) are operating MFAS in the same area over at least 6 hours and less than 10 nm apart) that are to be considered in exercise planning. If those conditions exist in the aggregate, dedicated aerial surveillance will occur in the area ahead of the exercise participants to detect any marine mammals that could be exposed to active SONAR. Additionally, normal safety zone requirements always apply and any detected marine mammals exhibiting unusual behaviors are required to be reported to the Officer in Tactical Command of the exercise who decides whether to delay, suspend or alter the exercise.

B. Low Visibility Specific Measure

53. This RIMPAC 2006 mitigation measure called for additional detection measures such as infrared (many Navy ships have stabilized infrared sensors that can detect animals without any visible light because of the temperature differences between the animal and the water) or enhanced passive acoustic detection in "low visibility conditions (i.e., whenever the entire safety zone cannot be effectively monitored due to the nighttime, high sea state, or other factors)." If detection of marine mammals was still not possible out to the prescribed safety zone, the measure required Navy to power down sonar as if marine mammals were present in the zones they could not see. The operational necessity to preserve ASW proficiency in a variety of conditions, as discussed above in section V of this declaration, and the recognition that prohibiting or limiting vessels from using MFAS during periods of restricted visibility violates international navigational rules, increases navigational risk, and jeopardizes the safety of the vessel and crew compelled omission of this measure. The Navy is, in

fact, capable of effectively monitoring a 1,000 meter safety zone at night using night vision goggles, infrared cameras, and passive acoustic monitoring. NDE II still requires personnel to use all available sensors and optical systems (such as night vision goggles) to aid in detection of marine mammals when employing MFAS so even in restricted visibility conditions, the Navy takes advantage of all available sensors.

C. Additional Measures during Chokepoint Exercises or in Constricted Channels

54. A chokepoint is a strategic strait or canal. Although there are over 200 straits around the world, only a handful around the world are considered to be "chokepoints," such as the Strait of Gibraltar, Panama Canal, Strait of Magellan, Strait of Malacca, Bosporus and Dardanelles, Strait of Hormuz, Suez Canal, and Bab el Mandeb. While chokepoints are relatively few in number, significant quantities of international commerce and naval shipping move through these chokepoints making them strategically important to the United States because a single quiet diesel submarine can position itself in the chokepoint and effectively block access beyond that point. RIMPAC 2006 required extensive specific additional measures for chokepoint exercises. The primary similarity of these chokepoints is lengthy shorelines that restrict maneuverability. The longer and more narrow the passage, the more likely the chokepoint creates an area of restricted egress for marine mammals. The waters off southern California have no actual constricted channels so a mitigation measure particular to chokepoints or constricted channels is not necessary in southern California waters, and even if it were, NDE II already considers them in measure #26.

D. Twelve nautical mile (nm) coastal exclusion in NDE I

55. In NDE I, the Navy agreed not to conduct exercises within 12 nm of the coastline except for activities at San Clemente and PMRF (a range in Hawaii). This condition was arbitrary and was not based on any science. For example, there is no scientific evidence that any set distance from the coast is more protective of marine mammals than any other distance. In post-exercise analysis, the Navy also determined that limiting the exercise to outside the 12 nm distance prevented crew members from gaining critical experience in training in shallow waters, and training in littoral waters. Sound propagates differently in shallower water. In real world events, it is highly likely crew members would be working in these types of areas, and these are the types of areas where diesel-electric submarines would be operating. Without the critical training near shore that ASW exercises provide, crews will not have the experience needed to successfully operate SONAR in these types of waters, impacting vital military readiness. In any event, the Navy has planned the SOCAL exercises to occur within an exercise range (W-291), the eastern boundary of which is farther than 12 nm off the United States mainland coast.

E. 25 Kilometers of 200 meter Isobath

56. In RIMPAC 2006 only, MFAS training was prohibited within 25 kilometers of the 200 meter isobath. There is no specific evidence that marine mammals are more or less likely to be present within the 200 meter isobath nor within 25 kilometers from the 200 meter isobath. In RIMPAC 2006, this measure had no observable effect on the protection of marine mammals during the

exercise, but its effect on ASW training was clear and significant because it effectively prohibited ASW training in the littorals, a vital realistic training area known to be a diesel submarine threat environment. Also, in the event that this measure was to be applied to SOCAL, and in NDE I it was not, this type of measure cannot be transferred from one part of the world to the other. The bathymetry off of the Hawaiian Islands where RIMPAC is held is much different than the bathymetry off of Southern California. For example, while there is a smooth and steep transition from the coast of the Hawaiian Islands to the deep seabed, the underwater bathymetry off southern California appears more like a mountain range as opposed to a plain. Nautical charts do not contain a 200 meter isobath line that could be used as reference datum. If the Navy were required to comply with such a measure, it would greatly complicate navigation, exercise planning, exercise implementation, and would prevent the Navy from using portions of its instrumented underwater range off San Clemente Island.

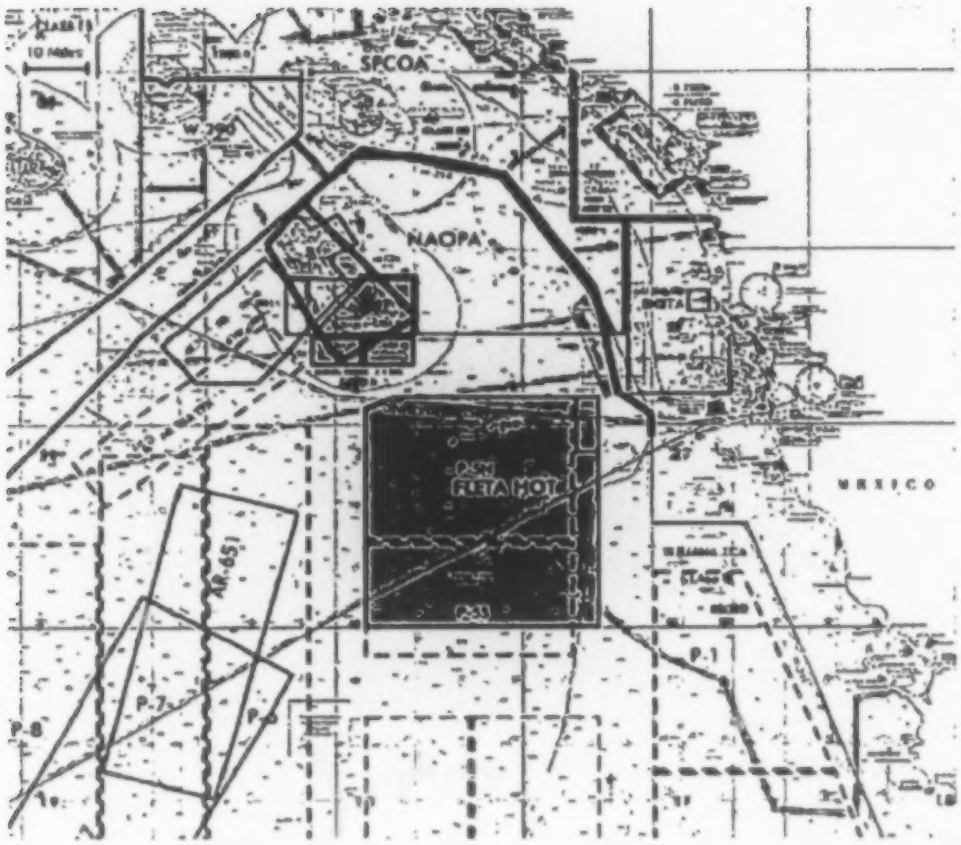
VIII. MEASURES NAVY WILL EMPLOY BEYOND NDE II

57. The Navy, in recognition of the Court's concern over mitigation measures employed during RIMPAC 2006 that are not a part of NDE II, will commit to implementing the following additional measures that, when added to the 29 previously-described mitigation measures, should be the full complement of measures for a tailored preliminary injunction for the remaining JTFEX/ COMPTUEX exercises.

58. The Navy will modify the NDE II safety zone provisions so that Navy will power-down 6 dB if a marine mammal is detected within 1,000 meters (instead of

yards) of the ship. The maximum received level before the power-down at 1,000 meters is 174.7 dB; with a 6 dB power-down at 500 meters is 174.4 dB; and with an additional 4 dB power down at 200 meters is 178.2 dB. These levels show that a marine mammal is never exposed to a dB level greater than 178.2 dB from the time the first power-down is implemented at 1000 meters until the sonar is secured at 200 meters. The remaining safety zone provisions of NDE II will also be converted to meters from yards. This will increase the size of the safety zone by roughly 10%, increasing the area monitored by the Navy by over 618,000 square yards. The increased safety zone applies at all times and in all environmental conditions: night, low visibility, and surface ducting. The provision provides additional protection to marine mammals, but does not unduly restrict Navy training.

59. For coastal operations, the Navy will commit to not operating sonar landward of the eastern boundary of the defined exercise range (W-291), which is the black line represented on the below map:



and is defined by the following coordinates:

LATITUDE NORTH	LONGITUDE WEST
33° 14' 24"	118° 28' 00"
33° 15' 00"	118° 15' 00"
33° 12' 30"	117° 58' 48"
32° 53' 00"	117° 41' 43"
32° 36' 50"	117° 32' 57"
32° 31' 30"	117° 30' 03"
32° 28' 00"	117° 30' 03"

60. This condition confirms that the training will occur in W-291, and that the entirety of the W-291 training

area is located more than 12nm from the United States mainland coast.

61. The Navy will also commit that it will not operate MFAS within the currently defined limits of the Channel Islands National Marine Sanctuary, as the Sanctuary is not within the boundary of the defined exercise range (W-291).

62. There is only one island within the boundary of W-291: San Clemente Island. For San Clemente Island, the Navy will commit to not operating sonar within an area, which is the black box represented on the above map, surrounding San Clemente Island, defined by the following coordinates:

LATITUDE NORTH	LONGITUDE WEST
33° 07' 40"	118° 36' 15"
33° 00' 15"	118° 43' 00"
32° 46' 30"	118° 34' 30"
32° 53' 00"	117° 41' 43"
32° 40' 25"	118° 29' 00"
32° 40' 25"	118° 29' 00"
32° 47' 15"	118° 17' 15"
32° 50' 30"	118° 18' 15"

63. This condition confirms that MFA sonar training is located at least 5nm away from the western shore of San Clemente Island. In addition, this condition prevents MFA sonar training within 3nm of the island's other shores.

64. The Navy will post two dedicated marine mammal lookouts on all surface ships operating MFA sonar for all exercises.

65. The Navy will confirm the presence of at least 3 non-dedicated watchstanders on all surface ships operating MFA sonar for all exercises.

66. The Navy will notify all ASW-capable surface ships that non-dedicated watchstanders are required to look out for marine mammals during all exercises and that all sightings are to be reported.

67. The Navy will ensure aircraft operating during the exercises will monitor for marine mammals and that all sightings are reported.

68. The Navy will confirm that all personnel engaged in passive sonar will monitor for marine mammals and report detection. All aircraft flying low enough to reasonably spot marine mammals will watch for marine mammals and report to ships in the vicinity for dissemination and appropriate action.

69. For the Tanner and Cortez Banks: from July to September of 2008, in recognition of blue whale migration patterns, the Navy will conduct pre-exercise monitoring of the Tanner and Cortez Banks prior to the commencement of a JTFEX or COMPTUEX. This monitoring will be one full hour or more of pre-exercise aerial monitoring. The Navy will consider relocating or delaying the exercise based on the result of the aerial monitoring. The decision to relocate or delay would be made by Commander, Third Fleet, who will issue messages to exercise participants (1) advising them to be generally on the lookout for blue whale presence near Tanner and Cortez Banks; and (2) providing the results of the aerial monitoring to assist with (1).

70. During March 7-21, 2008 and April 15 to May 15, 2008, in recognition of gray whale off-shore migration

patterns, the Navy will: conduct pre-exercise aerial monitoring in the area around the off-shore migration corridor during a JTFEX or COMPTUEX. Aerial monitoring would cover the portion of the gray whale migration path that passed through the exercise area. The Navy will consider relocating or delaying the exercise based on results of the aerial monitoring. The decision to relocate or delay would be made by Commander, Third Fleet, who will issue pre-exercise advisory messages to exercise participants, (1) advising them to be generally on the lookout for gray whale presence; and (2) providing the results of the aerial monitoring to assist with (1).

IX. CONCLUSION

71. The current marine mammal mitigation measures in NDE II are the result of both Navy and NMFS applying best available science to protect marine mammals while allowing realistic and effective Navy sonar training. The measures in section VIII provide additional protection to marine mammals, are offered in recognition of the Court's expressed concerns, and also allow the Navy to continue to certify its Strike Groups. The Navy recommends the NDE II mitigation measures and the additional measures of section VIII as the appropriate mitigation measures for a tailored preliminary injunction.

Pursuant to 28 U.S.C. §1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on the 14 day of December, 2007 at Newport, RI.

By: /s/ ILLEGIBLE
John M. Bird
Rear Admiral, U.S. Navy

APPENDIX N

Unclassified upon removal of text of paragraphs 3, 6, 7, 8, 14, 21, 22, 30, 31, 32, 33, 34, 35, 38, 39, 40, 41, and 42.

SECRET
cover page is unclassified

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Hearing Date: TBD
Time: TBD
Hon. Florence-Marie Cooper
U.S. District Judge

DECLARATION OF REAR ADMIRAL TED N. BRANCH, UNITED STATES NAVY, IN SUPPORT OF DEFENDANTS' MEMORANDUM REGARDING A TAILORED PRELIMINARY INJUNCTION

Unclassified upon removal of text of paragraphs 3, 6, 7, 8, 14, 21, 22, 30, 31, 32, 33, 34, 35, 38, 39, 40, 41, and 42.

SECRET

I, Rear Admiral Ted N. Branch, U.S. Navy, pursuant to 28 U.S.C. § 1746 do hereby declare as follows:

I. INTRODUCTION AND QUALIFICATIONS.

1. [U] I am a 1979 graduate of the U. S. Naval Academy, where I received a Bachelor of Science with a major in Oceanography. Subsequently, in 1992, I earned a master's degree from the Naval War College in National Security and Strategic Studies, and completed the Armed Forces Staff College. I have also completed Navy Nuclear Power Training, and CAPSTONE, a joint Flag and General Officer professional development program for senior military officers and government officials. The CAPSTONE course objective is to make these individuals more effective in planning and employing US forces in joint (i.e., involving two or more military services) and combined (involving two or more coalition countries) operations.

2. [U] Upon graduation from the U.S. Naval Academy, I reported to flight training and was designated a Naval Aviator in August 1981. My operational aviation tours of duty have included five Aviation Squadrons, with deployments to the Atlantic, Mediterranean, Red Sea, Indian Ocean, Arabian Gulf, and Pacific Ocean. I've flown in combat over Grenada, Lebanon, Iraq, and Bosnia. I've been an instructor pilot in two squadrons and held various positions, including squadron Executive and Commanding Officer. I have performed a variety of duties aboard surface ships, including: Assistant Navigator in the aircraft carrier USS FORRESTAL (CV 59);

Executive Officer in the nuclear aircraft carrier USS JOHN C. STENNIS (CVN 74) (completing pre-deployment certification workups in the Southern California Operating Area (SOCAL) and Western Pacific and Persian Gulf deployments); Commanding Officer in USS CORONADO (AGF 11) which, as the THIRD Fleet flagship, participated in three major strike group certification exercises; and most recently, Commanding Officer in the nuclear aircraft carrier USS NIMITZ (CVN 68). Under my command, NIMITZ won the Battle Efficiency and Safety Awards and the Golden Anchor for retention excellence, completed a Western Pacific and Arabian Gulf combat deployment, and two cycles of SOCAL training and certification. In total, I have completed pre-deployment certification work-ups (COMPTUEXs and JTFEXs) in conjunction with each of my eight deployments.

3. [S] [REDACTED]

4. [U] I am the Director of Information, Plans, and Security assigned to the staff the Deputy Chief of Naval Operations for Information, Plans, and Strategy (OPNAV N3/N5). My specific responsibilities include providing Office of the Chief of Naval Operations (CNO) oversight of all global Naval operations and force assignments, Anti-terrorism and force protection, Defense Support to Civilian Authorities (DSCA), Fleet and Combatant Commander Operational Plans and Contingency Plans, sourcing information and oversight of individual augmentee (individuals sent to assist in the Global War on Terror) and Navy Reserve mobilization processes, management of the Office of the CNO's crisis response and continuity of operations programs, and various other duties.

5. [U] The purpose of this declaration is to provide an overview of the missions and organization of the U.S. Navy's operational forces and to identify the U.S. national security and U.S. Navy strategic and operational impacts of failing to certify west coast strike groups for deployment. The statements made herein are based on my personal knowledge of Navy operations and on information made available to me as OPNAV Director for Information, Plans, and Security. I have also reviewed the 14 December 2007 Declaration of Rear Admiral John Bird. The information provided in this document does not exceed the SECRET classification. Any additional specificity might result in a higher classification of this declaration.

6. [S] [REDACTED]

7. [S] [REDACTED]

8. [S] [REDACTED]

II. THE NAVY'S STRATEGIC MISSION—THE CONTEXT OF RIPPLE EFFECTS

9. [U] Our challenge is to apply seapower in a manner that protects U.S. vital interests even as it promotes greater collective security, stability, and trust. As a maritime nation, we rely on our Navy's ability to operate freely at sea to guarantee access, sustain trade and commerce, and partner with other nations to ensure not only regional security but defense of our own homeland. We do this through physical presence at vital locations, including the Middle East and Western Pacific.

10. [U] The flexibility of naval forces allows them to be mission-tailored to meet a variety of global challenges. The ability to aggregate and disaggregate forces enhan-

ces our ability to group or disperse forces for maximum employment. To operate in this manner, naval forces must be unconstrained by the presence of an opposing submarine force or even the uncertainty of that presence.

11. [U] One of the principal threats is the large—and increasing—number of diesel and nuclear powered submarines, which give our potential adversaries an asymmetric advantage over our deployed surfaces forces. Central to our ability to mitigate this increasing threat is our ASW capability, which is uniquely maritime in nature. The Navy is the only service that can address this threat and neutralize it. The art of detecting, tracking, and prosecuting advanced submarines requires a highly developed set of skills and robust training to integrate the efforts of the entire strike group. No simulation can completely replace the environmental and technical challenges or substitute for real-world ASW experience for managing multiple assets in a complex, integrated fashion. Any curtailment in our ability to train for this mission would increase risk to our capability to conduct forward presence, deterrence, and most importantly, sea control operations.

12. [U] Our ability to conduct our missions relies on more than just being there. Only through maintaining a credible ASW capability can we convince our potential adversaries that they cannot prevail against us. Anything short of full ASW competency will convey the message that we may be vulnerable, and may embolden our adversaries.

13. [U] Retaining sea control allows us to secure strategic access and maintain global freedom of action. The ability to operate freely at sea is one of the most impor-

tant enablers of national power: diplomatic, information, military and economic. We cannot permit conditions under which our maritime forces would be impeded from freedom of maneuver and freedom of access, nor can we permit an adversary to interrupt the global supply chain by attempting to block historic sea-lines of communication. We must be able to impose local sea control wherever necessary, ideally in concert with friends and allies, but by ourselves if we must.

14. [S] [REDACTED]

III. HOW THE NAVY ORGANIZES ITS FORCES

15. [U] As discussed above, the Navy deploys its forces in various ways to meet to the goals of the National Security Strategy. Among the key elements of Navy major force organization and deployment are the Carrier Strike Groups and Expeditionary Strike Groups (CSGs and ESGs).

CARRIER STRIKE GROUPS

16. [U] The U.S. Navy employs much of its strike-capable force around the world in Carrier Strike Groups (CSGs), whose centerpiece is an aircraft carrier for which the CSG is named, e.g., the NIMITZ CSG is named after USS NIMITZ. Each CSG includes five surface combatant ships, a submarine, and the nine aircraft squadrons on the aircraft carrier. "Surface combatants" are designed to fight other ships, submarines, and aircraft in conjunction with the CSG's own aircraft. Surface combatants include cruisers, destroyers, and frigates among others.

EXPEDITIONARY STRIKE GROUPS

17. [U] Expeditionary Strike Groups (ESGs) are typically comprised of three amphibious ships and three surface combatants. Amphibious ships are designed to carry Marines or other ground forces and to put those troops ashore in combat. The surface combatants provide defense to the ships and aircraft assigned to the Group and offensive power to support the troops ashore. ESGs are named after the large amphibious ship that is the flagship of the group. For example, the TARAWA ESG, which is currently deployed, is named after the USS TARAWA.

IV. CAPACITY, OPERATIONAL AVAILABILITY AND LIMITATIONS.

18. [U] The Navy currently has eleven aircraft carriers, one of which is always undergoing a major maintenance period making it unavailable for operations, and one CSG based in a forward location away from the continental United States.

18.a. [U] USS CARL VINSON is currently in re-fueling overhaul in Newport News, Virginia. This overhaul will he completed in November 2009 at which time VINSON will return to the west coast.

18.b. [U] The USS KITTY HAWK, is forward deployed in Yokosuka, Japan, as part of the Navy's Forward Deployed Naval Force (FDNF).[1]

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[1] The U.S. Navy and Marine Corps station units in Japan as the Forward Deployed Naval Forces (FDNF) for several reasons. The presence of U.S. Naval Forces permanently stationed in Japan promotes regional stability and deters aggression by North Korea, China, or other would-be hostile actors in the region. Should deterrence fail, our forces are ready on station to conduct and support combat operations and

18.c. [U] Five nuclear powered aircraft carriers, the USS ENTERPRISE, USS THEODORE ROOSEVELT, USS HARRY S TRUMAN, USS DWIGHT D. EISENHOWER, and USS GEORGE WASHINGTON are homeported on the east coast in Norfolk Virginia.

18.d. [U] Four nuclear powered aircraft carriers, USS RONALD REAGAN, USS JOHN C. STENNIS, USS NIMITZ, and USS ABRAHAM LINCOLN are homeported on the West coast in San Diego, California, and Bremetron and Everett, Washington. All west coast CSGs and ESGs conduct certification exercises in SOCAL.

19. [U] Aircraft carriers undergo a planned maintenance program which enables them to remain operational to the end of their 50-year design service life. In addition to the carrier which is in long-term re-fueling overhaul (VINSON), an average of three carriers typically is in short term maintenance periods. This leaves an average of seven aircraft carriers available and ready to be deployed around the world.

20. [U] Similarly, there are ten major amphibious assault ships that serve as the centerpiece of the ESG.

20.a. [U] USS BONHOMME RICHARD, USS BOXER, USS PELELIU, and USS TARAWA are homeported in San Diego, CA

20.b. [U] USS BATAAN, USS IWO JIMA, USS KEARSARGE ,USS NASSAU, and USS WASP are homeported in Norfolk, VA

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fulfill our formal alliance obligations. Further, as the conflict against terror is a global effort, having our forces permanently deployed abroad ensures we are able to defend ourselves and our allies from terrorists worldwide and is a key element in homeland defense.

20.c. [U] USS ESSEX is forward deployed in her homeport of Sasebo, Japan as part of the FDNF.

21. [S] [REDACTED]

22. [S] [REDACTED]

V. THE DEPLOYMENT CYCLE: TRAINING AND MAINTENANCE

CSG AND ESG SCHEDULES

23. [U] Utilization of individual CSGs/ESGs is cyclical. Each cycle contains Training, Deployment and Maintenance phases. The cycle begins when the ship completes maintenance and enters the training phase. Upon certification of combat readiness, the deployment phase begins. The cycle is completed at the end of the subsequent maintenance phase following deployment. The notional cycle length is 32 months for a CSG, but actual cycles may vary based on maintenance requirements (addressed below) and such operational factors as the demand for forces as expressed by the Combatant Commanders; the number of available operational carriers; the availability of training facilities and ranges; and the availability of repair facilities.

24. [U] The Maintenance phase. A full spectrum of maintenance and modernization will be accomplished during various types of maintenance periods, referred to as "availabilities." Duration of a particular maintenance availability is a function of the overall plan for that ship. Maintenance availabilities range from 30 days to 39 months, depending on the type of maintenance. It is important to note that a planned maintenance regime is essential to enable these ships to reach their design service lives and permit an opportunity to install tech-

nology upgrades to their warfighting capability. Some limited amount of schedule flexibility exists in the event a major operational effort is required (major combat operations), but deferred maintenance and modernization has to be performed later or the service life of the ship will be shortened.

25. [U] The Training phase which follows Maintenance, is further broken down into Basic, Integrated and Sustainment phases. The Basic Training phase focuses on completion of unit level training (individual ship, submarine, and aircraft squadron) requirements. During this phase individual ships, submarines, or aircraft squadrons focus on honing the skills of their Sailors and Marines into a cohesive warfighting team. They do this by learning how to efficiently operate their tactical systems against air, surface, and subsurface threats. Upon attainment of unit level proficiency in the Basic phase, the ship, aircraft squadron or submarine will then integrate with other strike group units to conduct Integrated Training phase. The goal of the Integrated Training phase is to synthesize individual units and staffs into aggregated, coordinated strike groups in a challenging, multi-dimensional, full-spectrum warfare operational environment. In short, the Integrated phase trains individual ships, squadrons and staffs how to function as one team, capable of conducting a wide variety of missions in any place or environment. It is during this phase that Composite Unit Training Exercise (COMPTUEX) and Joint Task Force Exercise (JTFEX) are conducted. After this Integrated Training phase, the Fleet Commander (on behalf of the CNO) is able to certify the CSG or ESG fully ready to execute its missions, and it can be deployed to its ultimate theater of

operations. The Sustainment phase begins upon completion of the Integrated phase, continues through the scheduled deployment and post-deployment periods and ends with the commencement of the Maintenance Phase. Training during this phase focuses on honing the warfighting proficiency and readiness that was attained at the completion of integrated training, and keeping the ships and aircraft crews proficient and ready to deploy as scheduled, or to respond to crises around the world. In general, up to 60% of the ship's crew are re-assigned during any 32 month deployment cycle (primarily during the maintenance phase), resulting in a constant need to train to ensure sustained proficiency. As mentioned earlier, ASW skills are particularly fragile and perishable.

26. [U] Once fully trained and prepared, the CSG or ESG is dispatched on deployment to an overseas theater of operations, generally either to the Middle East region, where it becomes an asset of the U.S. Central Command (CENTCOM) or the western Pacific Ocean area, falling under the responsibility of U.S. Pacific Command (PACOM). East coast CSGs also provide support to U.S. European Command (EUCOM) while transiting from the United States to the Middle East via the Mediterranean Sea and the Suez Canal. A normal deployment lasts at least six months from the time the carrier leaves its home port in the United States until returning home. While deployed, the CSC/ESC is an instrument of national policy through participation in combat operations (e.g., OPERATION IRAQI FREEDOM and OPERATION ENDURING FREEDOM— AFGHANISTAN), through bilateral exercise participation with partner nations around the world, engagement with officials and civilians of other nations through port

visits, and crisis response or humanitarian relief assistance. During the entire deployment, these are the forces that guarantee the nation's security in the event of an unplanned conflict, keeping the fight far away from the United States shores and ensuring freedom of the seas. In these tasks, specific skill sets, including ASW, are absolutely crucial.

VI. EXPLORING ALTERNATIVES TO TRAINING ON THE WEST COAST

27. [U] If Navy is prohibited from utilizing its Southern California operating area and training ranges in a manner that allows readiness certification training for west coast-based CSGs and ESGs, there is no suitable alternative location available to ships homeported on the west coast. Due to operational, maintenance and fleet support issues, it is not feasible for west coast-based ships to use the training facilities and ranges on the east coast to achieve certification.

28. [U] Adding west coast-based CSGs and ESGs to the schedule of the east coast training facilities and ranges would stretch these resources beyond their capability to support. These facilities are carefully scheduled months in advance in order to marshal resources and provide quality training to the CSGs and ESGs using them. Additional CSGs and ESGs would add great complexity and overtax the capacity of east coast facilities.

29. [U] Sending extra ships to the east coast would place an unacceptable burden on the port infrastructure that would be required to support them. Pier space, already at a premium, would be overwhelmed and could require some ships to be berthed at ports in other states along the east coast that are not currently outfitted for

CSG/ESG berthing. Maintenance facilities would be over capacity, slowing repairs and dramatically increasing costs.

30. [S] [REDACTED]

31. [S] [REDACTED]

VII. IMPACTS OF BEING UNABLE TO DEPLOY WEST COAST-BASED STRIKE GROUPS

32. [S] [REDACTED]

CSG IMPACT

33. [S] [REDACTED]

ESG IMPACTS

34. [S] [REDACTED]

THE EFFECT OF EXTENDING DEPLOYMENT SCHEDULES

35. [S] [REDACTED]

36. [U] Moreover, while they are at sea, our Sailors and Marines work extremely long hours. It is not at all uncommon for work days to extend to 16-20 hours a day, and while at sea during operational and training periods, the typical work week is seven days. Much of the work is physically demanding and potentially dangerous.

37. [U] The toll on equipment from long deployments is also very real. For example—and this has been particularly true since the U.S. engaged in combat operations in Afghanistan in late 2001—the aircraft deployed on each aircraft carrier have experienced an unprecedented pace of operations, with associated wear and tear on the airframes as well as on the complicated systems in each aircraft. The aircraft carrier contains its own aircraft maintenance and repair facility onboard, but at

some point the work necessary to keep planes flying begins to exceed the capacity available at sea. Additionally, given the corrosive effects of the salt-water marine environment, the longer equipment is continuously and unrelentingly exposed to that environment, the greater the likelihood that it will degrade or, ultimately, fail altogether.

THE EFFECT OF COMPRESSING TRAINING SCHEDULES

38. [S] [REDACTED]

39. [S] [REDACTED]

THE EFFECT OF NOT BEING PRESENT IN CRITICAL AREAS

40. [S] [REDACTED]

41. [S] [REDACTED]

42. [S] [REDACTED]

CONCLUSION

43. [U] In the event the District Court issues an overly restrictive tailored preliminary injunction which prevents Strike Groups' certification, the nation will suffer critical degradation of national security. Any restriction or disadvantage imposed on our ASW capability that impedes the U.S. Navy's ability to retain control of the sea or project naval forces may have grave consequences. Moreover, loss of sea control could result in nothing less than a breakdown of the global system, a significant change in our international standing, and an alteration in our established way of life. For all the reasons discussed above, there will be severe, long-term harm to U.S. national security and Navy operations if the Navy

is unable to certify west coast-based strike groups to carry out its worldwide missions.

Pursuant to 28 U.S.C. § 1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed this 19th day of December, 2007, at Arlington, VA

By: /s/ ILLEGIBLE
TED N. BRANCH

APPENDIX O

UNITED STATES DISTRICT COURT FOR THE
CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL,
INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY,
ET AL., DEFENDANTS

Hearing Date: TBD
Time: TBD
Hon. Florence-Marie Cooper
U.S. District Judge

SUPPLEMENTAL DECLARATION OF REAR ADMIRAL JOHN M. BIRD IN SUPPORT OF DEFENDANTS' MEMORANDUM REGARDING A TAILORED PRELIMINARY INJUNCTION

I, Rear Admiral John M. Bird, U.S. Navy, do hereby declare as follows:

I. BACKGROUND

1. My declaration of December 14, 2007, Declaration of Rear Admiral John M. Bird In Support of Defendants'

Memorandum Regarding a Tailored Preliminary Injunction (Docket No. 67) (Bird Declaration I) contains my biography. This declaration addresses the impact of implementing Plaintiffs' proposed training restrictions during Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Exercises (JTFEX) in the southern California Operational Area (SOCAL OPAREA).

II. IMPACT OF ALL CUMULATIVE PLAINTIFFS' RESTRICTIONS

2. Figure 1 graphically represents the SOCAL OPAREA. Represented in green are the geographic areas in which mid-frequency active sonar (MFAS) would be allowed under Plaintiffs' proposed training restrictions. Even in the green areas, Navy would face further restrictions, such as power-down restrictions in low visibility and increased shut-down zones. Isolating MFAS to the southwestern area, as indicated in green, prevents required Strike Group training. Figure 2 shows the underwater topography, known as bathymetry, of the SOCAL OPAREA. Crucial to Navy deployment preparations is an ability to train in what appears in Figure 2 as mountainous terrain. It is here that the SOCAL OPAREA terrain is the most similar to the "littoral" areas of the world, where Navy must operate MFAS (see paragraph 19 of Bird Declaration I). This area of uneven bathymetry, essential to Navy Strike Group certification, is where Plaintiffs' restrictions would prevent Navy from training in the environment most threatening to Navy's support of national objectives. The Navy trains to the greatest threat, which is in the littoral environment at this time. Training in the deep water environment of the SOCAL OPAREA does not provide the un-

ique challenges Navy faces in the littoral regions. Further, Expeditionary Strike Groups, charged with transporting Marines ashore and providing gunfire support for U.S. land forces while defending themselves from air, surface, and subsurface attacks, train primarily between San Clemente Island (SCI) and Camp Pendleton (where the landing and training ranges to support Marine assaults are located). Strike Groups would not be able to conduct integrated (simultaneous air, sea, and land) warfare training under Plaintiffs' proposed restrictions. Therefore, Fleet evaluators would be not be able to assess the integrated capabilities of the Strike Groups before deployment.

3. Moving carriers and associated integrated training requirements farther out to sea precludes critical training of the Carrier Strike Groups. Operating in the unencumbered green shaded area of Figure 1, carrier aircraft would also be farther from land-based divert airfields in the event of emergency. Additionally, the increased distances for opposing forces aircraft, ships and submarines to engage the carrier make realistic training untenable because of the time and distance to transit to the carrier's area; to the extent they even have the ability to do so. The cumulative effects of these restrictions will result in the Navy not being able to certify its Strike Groups in all warfare areas. The consequences to national security of inadequate predeployment training and certification are detailed in Rear Admiral Ted Branch's classified declaration.

4. The Southern California Anti-Submarine Warfare Range (SOAR), even if available under Plaintiffs' proposed restrictions, cannot support all Strike Group training. The size is not adequate for carrier flight op-

erations during multiple launch and recoveries of aircraft. Additionally, bisecting the northwest portion of SOAR is an air corridor used by Los Angeles International airport. Navy use of the airspace around that corridor is restricted due to safety of flight concerns for both commercial and military aircraft. Expeditionary Strike Groups would not be able to conduct integrated warfare training at SOAR because of the reasons identified above in paragraph 2. The Navy and Marine Corps would lose the ability to do multi-dimensional warfare training, and capturing the end-to-end assessment would be impossible if MFAS training in the littorals were limited to SOAR.

III. ANALYSIS OF INDIVIDUAL TRAINING RESTRICTIONS PROPOSED BY PLAINTIFFS

A. Exclusion of the Catalina Basin between SCI and Santa Catalina Island

5. Expeditionary Strike Groups conduct vital training between SCI and Camp Pendleton (where the landing and training ranges to support Marine assaults are located). Forcing Navy out of this training area would prevent integrated training by bifurcating warfare requirements. Navy would have to conduct MFAS many miles to the southwest in deep water and then conduct the amphibious assault at some later date. Navy would be prohibited from transiting around SCI to simulate a strait transit which enables us to train strike groups to deal with coastal defense cruise missiles (emitters on SCI), small boat swarm attack, submarines, and aircraft in restricted waters. The area described in this exclusion is a vital staging area where small boat attacks are generated and can safely take place in numbers sufficient to simulate the enemy. The multi-dimensional

nature of coordinating enemy air, surface and subsurface attacks is lost, training is degraded, warfare commanders and sailors are left with an untested sense of security and training opportunities against anticipated real world threats are lost. In the past, Navy infrequently limited the parameters of exercises in this area, but it has done so for operational, not environmental, reasons.

B. 25 Nautical Mile Exclusion

6. SCI is Navy's west coast capstone training range. It has bombing ranges used by Navy aircraft and ships, an emergency airfield, and its nearby waters contain an instrumented range. Navy has conducted integrated combat operations near shore in every decade since 1940. Plaintiffs' proposed restriction would keep Navy out of more than 1,000 square nautical miles of ocean surrounding the island. This exclusion will also eliminate the ability to conduct ASW between SCI and Camp Pendleton where amphibious assaults are staged by Strike Groups (see previous paragraphs).

7. This restriction also restricts ASW during Replenishment-at-Sea (RAS) activities[1], normally conducted just south of SCI for safety purposes due to reduced wave height. ASW during RAS is a critical training event when ships conduct close maneuvers to transfer food, fuel, and ordnance. Submarine commanders take advantage of ships' restricted maneuvering during RAS to conduct attacks. Hence, Navy conducts opposed RAS training events using submarines simulating an adversary. Passive sonar is not a viable means of submarine

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[1] U.S. Navy vessels transfer fuel, food, ordnance, and other stores across cables rigged between two moving vessels.

detection during RAS due to the close proximity of other ships; hence, the use of MFAS is synonymous with RAS operations in a submarine threat area.

C. Exclusion of Tanner and Cortez Banks

8. ASW training in shallow water is vitally important to the U.S. Navy since diesel submarines typically hide in that extremely noisy and hence complex marine environment. The Arabian Gulf, Strait of Malacca, Sea of Japan, and the Yellow Sea all contain water less than 200 meters deep. The Tanner and Cortez Banks enable shallow water training in SOCAL because of their critical bathymetric features similar to the areas listed above. The Navy cannot conduct realistic training exercises without training in and around Tanner and Cortez Banks.

D. Seamount Exclusions

9. Seamounts are used by submarines to hide or mask their presence, requiring the need to train in this complex ocean environment. This is precisely the type of area needed by the Navy to train with MFAS. The Navy has not adopted large safety zones around sea mounts when operating with Australian forces.

E. Conducting Exercises to the Maximum Extent Practicable in Waters Deeper Than 1500 Meters

10. As seen in Figure 1, water that is deeper than 1500 m is the green area. Forcing the Navy out to the unencumbered areas for integrated training, as discussed above, would place Strike Groups at unsafe distances from their emergency divert airfields, remove Navy from its instrumented range (SOAR), and prevent Sailors from learning how to operate in areas of varied bathymetry (see Figure 2). In addition, it precludes the

Expeditionary Strike Groups from conducting integrated amphibious training around San Clemente Island.

F. Safety Zone—Two Kilometer Shutdown

11. Plaintiffs' proposed shutdown zone of two kilometers contains more than 100 times the area of Navy's current 200 yard shutdown zone. This restriction exponentially increases the number of times that a ship will have to shut down active sonar, preventing realistic training and depriving ships of valuable submarine contact time. Operational commanders would lose awareness of the tactical situation through the constant stopping and starting of MFAS leading to exercise event disruption. In RIMPAC 06, in one event, Navy shutdown twice using a 200 meter shutdown range. Assuming a uniform dispersion of marine mammals, the proposed restriction would yield 200 shutdowns, rendering any exercise ineffective. The increase in required shutdowns combined with the increased time to ensure this larger zone is clear of marine mammals will significantly harm the ability of Navy to train and certify Strike Groups. Also, a submarine could take advantage of the lapses in active sonar, and position itself for an attack. SOCAL JTFEXs have not applied de facto shutdown zones greater than 1000 yards. Contrary to Plaintiffs' assertions, the Navy has not adopted larger safety zones or shut down zones when operating with Australian forces.

G. POWER-DOWN AT NIGHT AND IN LOW-VISIBILITY CONDITIONS (INCLUDING SEA STATES GREATER THAN 3)

12. The Beaufort Scale is an established means to describe sea state. The lowest sea state is 0 which is described as "Calm (glassy)." The highest sea state is 12,

which is described as with wave heights over 16 meters (52 feet). Sea state 3 is described with wave heights from 0.6 to 1 meters (about 2 to 3 feet). Analysis of records over 100 years indicates that the sea state in the SOCAL OPAREA exceeds sea state 3 the majority of the time. For instance, in January 2007, conditions exceeded sea state 3 every day. The Navy cannot wait days, let alone months, for the sea to calm in order to conduct effective training. With a 6 dB power-down Navy would be forced to operate its sonar at only 25% of its normal power. Power reduction will eliminate realistic training for crews as described in the Bird Declaration I, paragraphs 25-29. Paragraphs 23, 24, and 53 of the Bird Declaration I further address nighttime and low-visibility conditions.

H. POWER-DOWN SONAR BY 6 DECIBELS IN SIGNIFICANT SURFACE DUCTING CONDITIONS

13. Training in surface ducting conditions is critical to effective training because such conditions alter sonar transmissions and submarines take advantage of these sound distortions. See paragraph 52 of the Bird Declaration I. Ocean conditions contributing to surface ducting change frequently and surface ducts can be of short duration. The means to predict surface ducts in advance are ineffective. Surface ducting is also non-uniform and does not necessarily extend over a large geographic area, making it difficult to determine where to reduce power and for how long. As a result, implementing this restriction would result in powering down when surface ducting was not actually present, thereby unreasonably preventing realistic training.

I. Reducing Sonar Use

14. Navy environmental planning uses estimated numbers of sonar use to model marine mammal effects based on review of historical data and an understanding of how ASW training events occur, which is in turn is based on operational requirements. Once an exercise starts, the operational commanders use MFAS as dictated by their assessment of the tactical situation, the exercise and their actions are not scripted. Sonar use is dependent on the ability of submarines to remain hidden from exercise participants, environmental conditions and how well the integrated ASW team works together. Reducing sonar use below the needs of the operational commander would result in significantly degraded training.

J. Pre-Exercise Monitoring

15. Lookouts and watchstanders report everything they see on or in the water, day or night, 24/7, including marine mammals and sea turtles.

K. Passive Acoustic Monitoring

16. NDE II requires passive acoustic monitoring by exercise participant sensors. Technology does not exist on the instrumented range to provide bearings and ranges of marine mammals to exercise participants.

L. Near-Shore Monitoring

17. The extra monitoring associated with choke-point exercises was to mitigate the "Bahamas' factors," which are carefully addressed in NDE II. There is no choke-point between San Clemente and Santa Catalina islands. All "choke-points" are notional. See Bird Declaration I, paragraph 54.

IV. SUMMARY

18. I have read Plaintiffs' brief and find their claim that Navy can effectively train for war under the above restrictions to be entirely without merit. Plaintiffs' training restrictions will result in the inability of the Navy to train its Strike Groups to the level that the Navy has determined is required for deployment. Navy's mitigation measures as outlined in NDE II, combined with the additional measures Navy offered for the tailored injunction, meet national security requirements while protecting marine mammals

Pursuant to 28 U.S.C. § 1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on this 20 day of December, 2007, at Pearl Harbor, Hawaii.

By: /s/ ILLEGIBLE
JOHN M. BIRD
Rear Admiral, U.S. NAVY

Figure 1 – Areas in Green displace Navy from the northeastern section of SOCAL OPAREAS, including from San Clemente Island (SCI), from waters between SCI and Camp Pendleton where Expeditionary Strike Groups primarily train, and from the instrumented Southern California Anti-Submarine Warfare Range. The training restrictions also push Strike Groups out long distances from emergency, land based divert airfields:

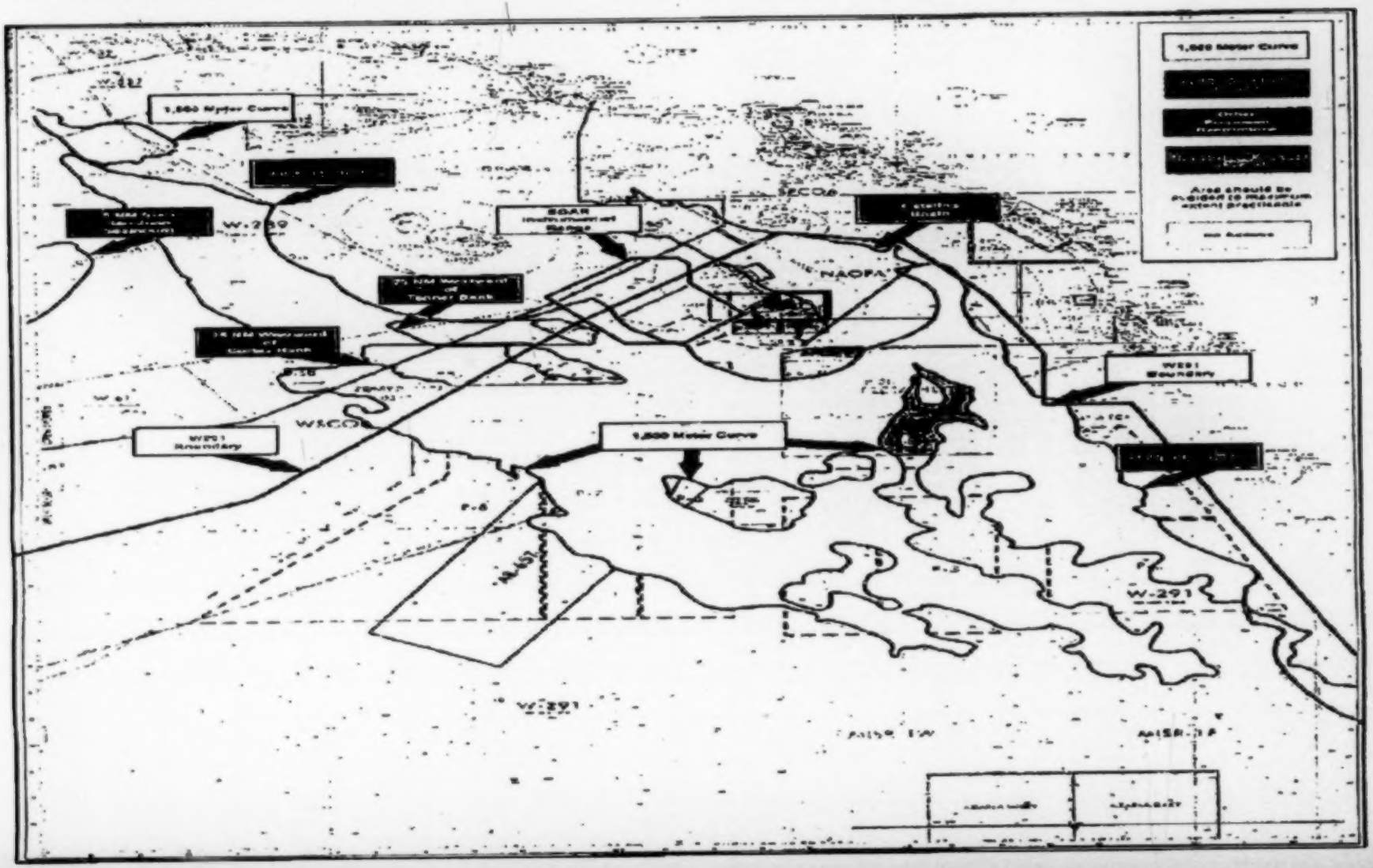

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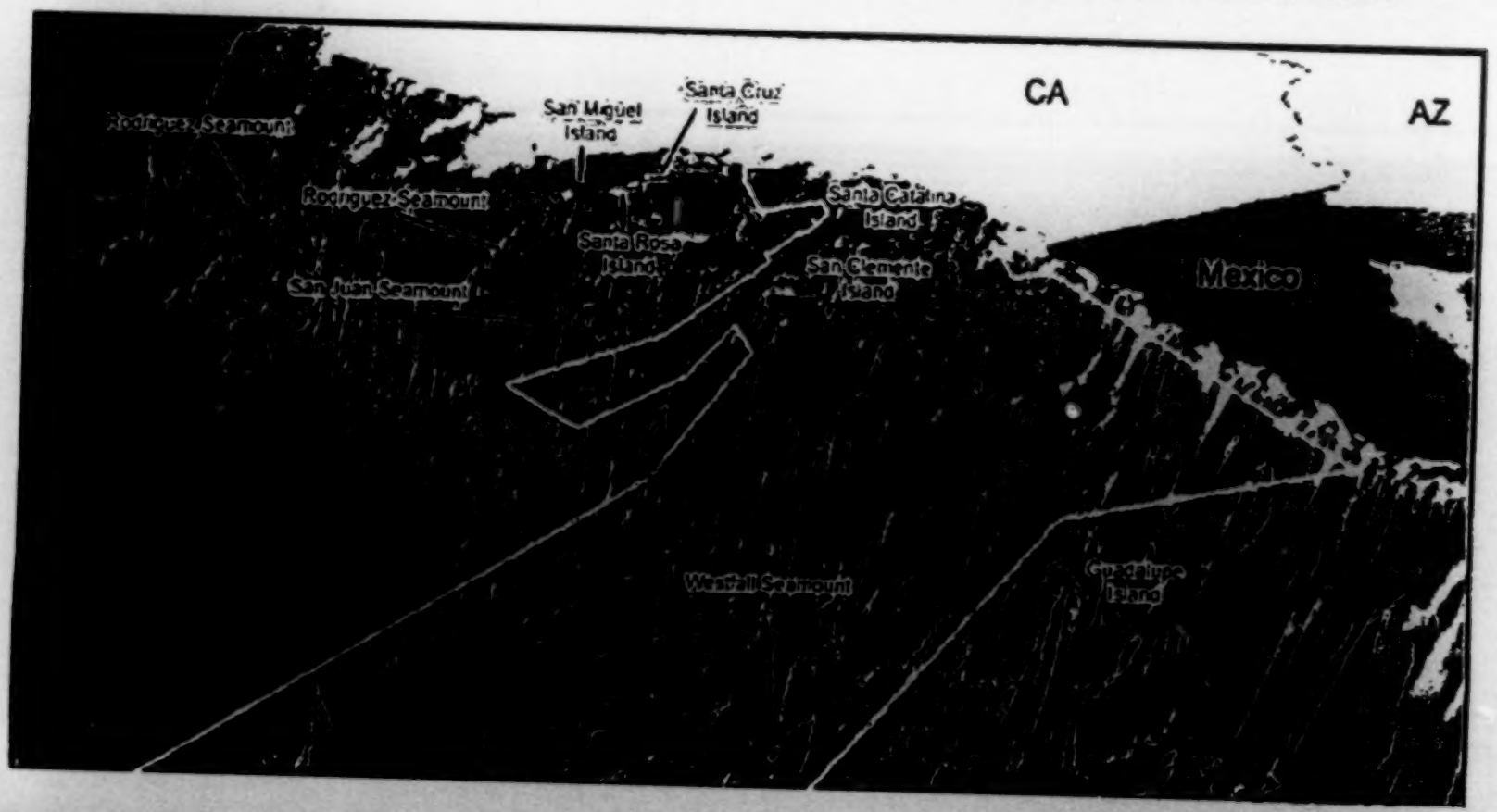
Figure 2 – The northeastern portion of the SOCAL OPAREA, off limits if Plaintiffs' restrictions are implemented, offer littoral conditions: shallower water, steeper bathymetry, and underwater ridges. As described in the Bird (I) declaration, paragraph 55, the littorals are a critical training area. Navy has already agreed to not conduct the remaining COMPTUEX / JTFEX exercises within 12nm of California's mainland coast, making the remaining "mountainous" underwater terrain even more critical to Navy MFAS training. Also, San Clemente Island and Naval Air Station North Island, San Diego, provide emergency airfields to divert aircraft unable to land on the carrier. Moving the Strike Groups away from these areas increases risks of emergency landing diverts to these fields.



APPENDIX P

Unclassified upon removal of text of paragraphs 11, 14, through 18, 22 through 25.

SECRET

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. 8:07-cv-00335-FMC (FMOx)
NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Hearing Date: TBD
Time: TBD
Hon. Florence-Marie Cooper
U.S. District Judge

DECLARATION OF ADMIRAL GARY ROUGHEAD, UNITED STATES NAVY, IN SUPPORT OF DEFENDANTS' MOTION FOR A STAY PENDING APPEAL

Unclassified upon removal of text of paragraphs 11, 14, through 18, 22 through 25.

SECRET

I, Admiral Gary Roughead, U.S. Navy, Chief of Naval Operations, do hereby declare as follows pursuant to 28 U.S.C. § 1746:

BACKGROUND

1. [U] I am a 1973 graduate of the U.S. Naval Academy, where I received a Bachelor of ~~Seience~~ degree with a major in Foreign Affairs.

2. [U] I am a designated Surface Warfare Officer in the United States Navy. I have served in seven U.S. Navy warships: Gunnery Assistant onboard USS JOSEPHUS DANIELS (DLG 27); Engineering Officer in USS OBANNON (DD 987); Executive Officer in the patrol gunboats USS DOUGLAS (PG 100) and USS TACOMA (PG 92); Executive Officer in USS SPRUANCE (DD 963); and Commanding Officer of USS BARRY (DDG 52) and USS PORT ROYAL (CG 73). I am the first naval officer to have commanded first a destroyer and then a cruiser outfitted with the Navy's most advanced and comprehensive detecting, tracking and missile weapon system (Aegis).

3. [U] Ashore, I have held numerous staff positions, including: Aide and Flag Lieutenant to Commander, Naval Surface Forces, U.S. Atlantic Fleet; Resource Sponsor and Surface Warfare Analyst within the offices of both the Chief of Naval Operations and the Secretary of the Navy; Administrative Assistant to the Secretary of the Navy; and Executive Assistant to the Commander, U.S. Pacific Command (joint tour).

4. [U] I was promoted to Flag Rank in October 1997. Since that time, I have served in the following positions: Commandant of the U.S. Naval Academy; Commander, Cruiser Destroyer Group TWO; Chief of Legislative Affairs; Commander, SECOND Fleet and Striking Fleet Atlantic (joint tour); Deputy Commander, U.S. Pacific Command; Commander, U.S. Pacific Fleet and Commander, Joint Task Force 519 (joint tour); and Commander, U.S. Fleet Forces Command. On September 29, 2007, I assumed the position of the Chief of Naval Operations.

5. [U] I have over three decades of experience training with and employing mid-frequency active (MFA) sonar. As Executive and Commanding Officer of several ships, I have extensive experience in deploying MFA sonar in individual unit and strike group anti-submarine warfare (ASW) exercises and operations. As Commander, Destroyer Group TWO, I commanded the USS GEORGE WASHINGTON (CVN 73) Strike Group, actively training the integrated strike group in ASW proficiencies and then employing MFA sonar in full-spectrum operations during deployment to the Arabian Gulf in support of United Nations' mandates regarding Iraq. As the Commander of SECOND FLEET, I was directly responsible for the training and certification of all East Coast carrier and expeditionary strike groups, specifically to include certification in ASW capabilities. As Deputy Commander, U.S. Pacific Command, I helped oversee the receipt and deployment of certified Navy carrier and expeditionary strike groups to meet requirements of the National Command Authority throughout the Pacific and Indian Oceans. As Commander, U.S. Pacific Fleet, I was the Naval Component Commander for U.S. Pacific

Command, responsible for delivering trained and certified naval forces, specifically those strike groups trained and certified in the Southern California Operating Area (SOCAL OPAREA) and, as Commander, Joint Task Force 519, responsible for carrying out U.S. Navy obligations pursuant to the Taiwan Relations Act. As Commander, U.S. Fleet Forces Command, I served as the primary advocate for personnel, training, requirements, maintenance, and operational issues for the combined Fleet, reporting directly to the Chief of Naval Operations.

6. [U] As the Chief of Naval Operations, by Title 10, United States Code and U.S. Navy Regulations, I am specifically responsible to organize, train, equip, prepare and maintain the readiness of Navy forces, including those for assignment to unified or specified commands, for the performance of military missions as directed by the President, the Secretary of Defense, or the Chairman of the Joint Chiefs of Staff. 10 U.S.C. § 5031, *et. seq.*; 32 C.F.R. § 700.405(c)(1). While I have delegated to certain subordinate commanders the authority to certify strike groups for deployment, I am ultimately responsible for and oversee the certification and delivery of trained naval forces to meet any and all national security requirements. I am a member of the Joint Chiefs of Staff as the Navy's uniformed advisor to the President, National Security Council, Homeland Security Council, and the Secretary of Defense. 10 U.S.C. § 151.

7. [U] This declaration addresses the impact of implementing the training restrictions imposed on Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Training Exercises (JTFEX) in the SOCAL

OPAREA pursuant to the district court's Order Issuing Preliminary Injunction of January 3, 2008 [hereinafter "Order"].

II. STRIKE GROUP TRAINING AND CERTIFICATION

8. [U] Strike group training consists of Basic and Integrated Phases. The Basic Phase is training at the individual ship and aircraft level. The Integrated Phase brings the entire strike group together to perform as a team during COMPTUEX and JTFEX exercises. The COMPTUEX and JTFEX are indispensable exercises, as they are the *only* opportunity for the strike group's 6,000-plus Sailors and Marines to come together prior to deployment for *integrated* combat training carefully planned and structured to meet real world threats. Integration is vital, as the real value of these exercises is in bringing the air, surface and sub-surface assets together, and training them concurrently in a myriad of different mission areas. It is important to stress the ship crews in all dimensions of warfare simultaneously. If one of these training elements were impacted—for example, if effective sonar training were not possible—the training value of the other elements would also be degraded because—as with all tasks—it is easier to conduct fewer simultaneously than it is to conduct many. COMPTUEX is a 21 day at-sea exercise that includes a schedule of events and three integrated battle problems. COMPTUEX is scheduled prior to JTFEX in the Fleet Response Training Plan cycle, and uses a "crawl—walk—run" training methodology because it is the first time the strike group comes together as a composite fighting team.

9. [U] A JTFEX is an advanced, free-play, scenario-driven war-game, testing the strike group against dedi-

cated opposition forces. It picks up where COMPTUEX leaves off, and uses a "run—sprint" training methodology. The JTFEX is the "final exam" or "graduation event" due to its operational tempo, difficulty and length. The JTFEX is the culminating training event that determines strike group certification. Whether to certify, and in what war-fighting disciplines, is a military decision based upon objective and subjective assessments of military proficiencies demonstrated in realistic scenarios that replicate current and projected threats.

10. [U] Strike group training is a discrete event within the Fleet Response Plan schedule. All strike group schedules are coordinated to optimize the Navy's limited assets and provide trained and ready forces to meet Combatant Commander requirements. The Fleet Response Plan schedule is interlocking and interdependent. Each strike group must perform the required training during the time allotted. The United States Navy has only eleven carriers, of which one will always be in long-term nuclear refueling. With a tight interlocking schedule to rotate the remaining ten carrier strike groups through maintenance, training and deployment cycles, the inability to certify just one strike group during the planned training period creates a negative cascading effect on my ability to provide combat ready forces to Combatant Commanders who employ them. Due to the interlocking elements of a particular Strike Group's training cycle, extraneous restrictions seriously jeopardize the Navy's ability to produce combat ready forces to Combatant Commanders. In this context, marine mammal mitigation measures must be compatible with realistic strike group training under all conditions and at all times. Anything less will result in uncertainty of scheduling, and present an unacceptable risk to strike

group certification and to providing naval forces to Combatant Commanders as demanded.

III. IMPACT OF PRELIMINARY INJUNCTION TRAINING RESTRICTIONS

11. [S] **[REDACTED]**

12. [U] The Order requires the Navy cease all use of MFA sonar, whether from ships or aircraft, when marine mammals are spotted within 2,200 yards. This 2,200 yard "shut-down" zone is markedly more onerous than the 1,000 yard "safety zone" of NDE II, which has a "shut-down" requirement at 200 yards. The Order's 2,200 yard "shut down" zone will result in increased interruptions to training exercises, and introduce artificial constraints into certification exercises designed to stress every aspect of strike group performance. The timing of a shut- down (or power-down) can be critical as the ASW component of an exercise can proceed over the course of several days. (This is particularly important given that a JTFEX usually lasts less than two weeks.) The exercises are scored as a successful "attack" when either the surface ship or the submarine maneuvers to a location that allows for the training "kill." It may take days for the scenario to develop to the point where a ship or submarine makes a successful attack. Thus, any shut-down during the critical phase of sonar tracking can result in the loss of multiple days' worth of training, and negate the effectiveness of the entire exercise. The 2,200 yard shut-down provision vastly increases the risk of negating training effectiveness, preventing strike group certification, and disrupting carefully orchestrated deployment plans to meet world-wide operational commitments.

13. [U] From July 2006 to September 2007, eight COMPTUEX or JTFEX exercises were conducted in the SOCAL OPAREA. For those exercises, the participating vessels reported 336 sightings of approximately 4,300 marine mammals. (Sightings were variable by exercise, ranging from 73 sightings of 1,225 marine mammals in one exercise to 11 sightings of 230 marine mammals in another.) Of the total sightings, 57 occurred when sonar was employed. Of those, 7 sightings occurred within 200 yards, and 38 occurred within 2,200 yards of the transmitting vessel. Increasing the shutdown distance from 200 to 2200 yards, therefore, increases the requirement to shut down sonar five-fold based upon data from the eight SOCAL exercises (38 shut-downs is a five-fold increase over 7 shut-downs). By making a shut-down five times more likely, the 2,200 yard "shut down" zone greatly increases the risk that the value of the exercise will be lost and certification jeopardized. (The five-fold increase is only an average. For any particular exercise the increase in shutdowns may be greater.) The risk that this potential loss of sonar training represents, when also considering that any shut-down at a critical moment can negate days of ASW effort, presents training restrictions that will not reliably allow for certification and deployment of naval forces in time and in accord with national security requirements.

14. [S] [REDACTED]

15. [S] [REDACTED]

16. [S] [REDACTED]

17. [S] [REDACTED]

18. [S] [REDACTED]

19. [U] The Order's additional restrictions are overly broad and present other difficulties. For example, the 2,200 yard "shut-down" zone provision applies not only to ships' sonar, but also to aircraft-launched sonobuoys and active dipping sonar. Helicopter active dipping sonar transmits at a different power (dB) level than vessel-based sonar: 217dB vice 235dB, which is less than 2% of the power of the ship's sonar. Aircraft-based sonobuoys operate at an even lower power level: 202dB. It is not appropriate to employ an identical "shut-down" zone for these three systems when two of the three transmit at significantly reduced dB levels.

20. [U] The Order also does not account for marine mammal "bow riders." Marine mammals (dolphins and porpoises primarily) often "play" by riding on the bow-wave of a ship, purposefully swimming close to the ship. This occurs even during active MFA sonar transmissions (NDE II makes specific provision for bow riding marine mammals), and the combination of the two events demonstrate that these mammals are not adversely affected by the use of sonar. The Order, however, would have a ship cease all sonar transmissions during "bow rider" events. A dolphin can keep pace with a Navy ship, even at cruising speed. The Order, therefore, would place vital MFA sonar training at the whim of a playful marine mammal should the mammal chose to continue to ride the bow-wave of the ship.

21. [U] Finally, the Order requires aerial monitoring by a dedicated aircraft for the duration of an MFA sonar exercise, without consideration for safety, maintenance, or the efficiency of monitoring techniques. During major exercises, strike groups have many aircraft with trained aircrews whose primary responsibility is to

search the sea surface for periscopes (small in size when compared to marine mammal) or any other signs of a submarine. These focused observers, and the trained lookouts and watchstanders on strike group ships, are far more likely to spot marine mammals than a single, dedicated aircraft. Further, a dedicated aircraft would present a flight safety hazard as it traverses the exercise area, adding to the already high activity demands of strike group mission aircrews and controllers.

IV. CONCLUSION

22. [S] **[REDACTED]**

23. [S] **[REDACTED]**

24. [S] **[REDACTED]**

25. [S] **[REDACTED]**

Executed this 10th day of January, 2008, at Washington, D.C.

By: /s/ ILLEGIBLE
GARY ROUGHEAD

FIGURE 1

CLASSIFIED-SECRET

[REDACTED]

FIGURE 2
CLASSIFIED-SECRET

[REDACTED]

APPENDIX Q

UNITED STATES DISTRICT COURT FOR THE
CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL,
INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY,
ET AL., DEFENDANTS

Hearing Date: TBD
Time: TBD
Hon. Florence-Marie Cooper
U.S. District Judge

DECLARATION OF VICE ADMIRAL SAMUEL J. LOCKLEAR III, U.S. NAVY, IN SUPPORT OF DEFENDANTS' *EX PARTE* APPLICATION FOR STAY PENDING APPEAL

I, Vice Admiral Samuel J. Locklear III, U.S. Navy, Commander of the U.S. THIRD Fleet, do hereby declare as follows:

PROFESSIONAL BACKGROUND AND RESPONSIBILITIES

1. I am Commander of the U.S. THIRD Fleet.

2. As THIRD Fleet Commander, I am responsible for all naval operations in the Eastern Pacific and the oversight of the integrated training and deployment certification for all West Coast naval forces, to include Carrier and Expeditionary Strike Groups.

3. The purpose of this declaration is to provide the Court with important information on the impact that its Modified Preliminary Injunction will have on the ability of U.S. THIRD Fleet to complete its mission of providing naval forces, particularly strike groups, prepared to deploy to meet the requirements of the combatant commanders. The statements made herein are based on my personal knowledge of Navy operations and on information made available to me as Commander, U.S. THIRD Fleet.

4. I am a 1977 graduate of the United States Naval Academy where I earned a Bachelor of Science degree in Operations Analysis. After initial Surface Warfare training, I served in the destroyer WILLIAM V PRATT (DDG-44) as missile Fire Control Officer and Main Propulsion Assistant. After selection for training and service in the Navy Nuclear Propulsion program, I subsequently served as the Electrical Principal Assistant in the aircraft carrier CARL VINSON (CVN-70).

5. Graduating with "Top Gun" honors from the Surface Warfare Department Head School, I then served as Operations Officer and Engineer in the destroyer CALLAGHAN (DDG-994). After completing an Executive Officer tour in the cruiser TRUXTUN (CGN-35), I com-

manded the Spruance-class destroyer LEFTWICH (DD-984). I subsequently commanded DESTROYER SQUADRON 2, where I was responsible for six destroyers and frigates and served as the Anti-Submarine Warfare Commander within the EISENHOWER Carrier Battle Group. In October 2002, I assumed command of NIMITZ Carrier Strike Group, deploying to the Arabian Gulf in 2003 in direct support of Operation *Iraqi Freedom* and Operation *Enduring Freedom*. In May 2007, I assumed command of U.S. THIRD Fleet in San Diego, responsible for oversight on all Navy operations, integrated training, and certification of strike groups in the Eastern Pacific.

6. Ashore, I have served as a Company Officer at the United States Naval Academy and later as the 78th Commandant of Midshipmen at the Naval Academy. In Washington, D.C., I have served in the Joint Staff, as Chief of the Regional Engagement and Presence Branch in the Strategic Plans and Policy Directorate. Within OPNAV, I have served as Executive Assistant to the Vice Chief of Naval Operations, Deputy Director for Requirements in the OPNAV Assessment Division (N81D), Deputy Director for Surface Warfare (N76B), Director of the Assessment Division (N81) and Director of the Programming Division (N80).

7. I am a 1992 graduate of the Industrial College of the Armed Forces, hold a master's degree in Public Administration from George Washington University, and attended the Senior Officials in National Security course at the Maxwell School of Syracuse University.

8. I have interacted with all aspects of naval operations from the tactical level (during my shipboard assignments and as a Destroyer Squadron and Strike

Group Commander), to the operational level (as a Fleet Commander and in positions on the Joint Staff), to strategic level decision making as a member of the Chief of Naval Operations staff. Accordingly, and in the specific context of this litigation, I understand how sonar is employed and deployed, as well as its relevance to our global national security considerations.

9. Based on my experience at sea, both as a surface warfare officer, Commanding Officer of warships that employ sonar, and as Commander, U.S.THIRD Fleet responsible for the training that is conducted in the Southern California Operating Areas—including the exercises in question—my opinion is that imposing a 2200-yard shutdown zone will have crippling implications on Navy's ability to conduct realistic pre-deployment ASW training employing MFA sonar. I am aware that Commanding Officers have shut down sonar in the past, because of the presence of marine mammals, even when not required to do so by law or higher authority. I must caution, however, that their actions do not mean that requiring mandatory shutdowns at similar ranges would have a negligible impact on training effectiveness. Based on my experience, information made available to me in official records and reports, including the exhibits attached to this declaration,[1] and the performance re

[1] Based upon reasonable inquiry, attached as Exhibit 1 is a true and correct copy of excerpts of six After Action Reports prepared by the Navy for the following exercises: USS Boxer ESG-5 COMPTUEX 06-03 and JTFEX 06-04; USS Stennis CSG COMPTUEX 06-04; USS Stennis CSG JTFEX 07-01; USS Nimitz CSG COMPTUEX 07-01; Combined After Action Report for COMPTUEX 07-02, JTFEX 07-03, and JTFEX 07-05; and the January 4, 2008 preliminary draft version of the ARR for COMPTUEX 07-7. The Draft AAR is the most recent report available for COMPTUEX 07-7. Attached as Exhibits 2 through 7 are

views that I have received after major training exercises, I know that a 2,200 yard shutdown zone will present a severe impact to training and certification of readiness to perform realistic ASW.

10. There are several significant reasons why ships' Commanding Officers may shut down sonar before being legally required as a result of the presence of marine mammals. First, the Navy places great emphasis upon environmental stewardship, a point not lost on our Commanding Officers. There is no Commanding Officer of a destroyer, cruiser, or frigate who does not understand the importance of avoiding harm to marine mammals. Commanding Officers have repeatedly been advised of the need to comply with prescribed mitigation measures, including specifically the 1,000 yard safety zone. Commanding Officers have not been advised that they cannot shut down sonar until a marine mammal is sighted just beyond the shutdown zone. Second, Commanding Officers have the discretion to take action whenever possible, consistent with the tactical situation and the level of warfighting risk they find themselves in.

11. It is critical to understand, however, that all of these discretionary decisions by a Commanding Officer are ultimately influenced by the tactical situation, something they are charged with understanding at all times. The same Commanding Officer who might order a shutdown of sonar beyond that required by law or regulation when not in contact with a submarine—or when he determines that the submarine threat in the area for which he is responsible is minimal—would not shut down

---

true and correct, complete copies of the above-described six After Action Reports. Because some reports cover more than one exercise, these six reports cover eight exercises with monitoring data.

sonar until legally required to do so if in contact with a submarine, or in a position where imminent contact with a submarine was anticipated. Commanding Officers could also consider whether other MFAS-capable ships of the strike group (or a helicopter's dipping sonar or a pattern of sonobuoys) have contact on the submarine, which could mitigate the operational impact of MFAS shutdown. Because the Modified Temporary Injunction applies to shipboard sonar, dipping sonar, and sonobuoys alike (despite the vast differences in source levels), removing the ASW commander's option in appropriate circumstances to maintain contact with a submarine using helicopter dipping sonar or sonobuoys eliminates a tool to mitigate the impacts of the surface ship shutdown. Helicopter dipping sonars and sonobuoys are valuable antisubmarine warfare tools in their own right because they can be deployed faster than a ship can move, but under NDE II, they also provided options to an ASW commander when ship sonar is restricted. Antisubmarine warfare is a science steeped in art, a frustratingly difficult warfare area in which tremendous effort goes into gaining and maintaining contact on the submarine, often at ranges less than 2200 yards. No Commanding Officer surrenders contact on a submarine unless ordered to do so; the stakes are too high. In a tactical situation where a Commanding Officer is in contact with a submarine, or contact is imminent, or the risk to the aircraft carrier or other high value unit (HVU) is elevated, the CO will be expected to continue to use active sonar unless another ship or helicopter can gain contact or if regulatory reasons dictate otherwise. In these critical tactical situations, shutdown—even for a few minutes—is destructive to the operational effectiveness of the exercise, just as it would be potentially fatal

in combat. Just a few minutes of lost tactical momentum will destroy much of the effectiveness of an exercise if the tactical situation becomes driven by artificial constraints (i.e., marine mammal induced MFAS shutdown) rather than the exercise events to that point, and the tactics and skill of the participants. A single lost contact in an exercise scenario, as it would be in combat, cripples certification for the units involved. It may take days to get to the pivotal attack in antisubmarine warfare, but only minutes to confound the results upon which certification is based. Success in ASW relies upon difficult and perishable skills that must be honed and realistically tested, to meet the operational challenges we face in the real world today. For these reasons, I believe that all the discretionary shutdowns likely occurred during tactically insignificant times.

12. Under the current court order, a 2200-yard shutdown zone would be mandatory irrespective of the tactical situation, and would remove a Commanding Officer's ability to use sonar to its fullest capability. There is a big difference between one or two commanding officers voluntarily shutting down at tactically insignificant times during any given exercise and removing every single commanding officer's discretion, forcing a shutdown at 2200 yards all the time. This operational restraint would lead to many more mandatory MFAS shutdowns than the current 200 yard shutdown zone, and result in a significant, adverse impact to realistic training. Admiral Roughead's classified declaration describes in detail the adverse impact to training caused by a 2200-yard shutdown zone. In addition, Navy has not developed a de facto 4,000-yard shutdown zone. In fact, during the COMPTUEX completed in November 2007, the Sea Combat Commander aboard the aircraft carrier, who

controls the antisubmarine escort, took specific action to eliminate unnecessary shutdowns out of a concern that precious antisubmarine training was being lost.

13. A Commanding Officer at sea has great authority and the discretion to take mitigation actions beyond those required by law and regulation if supported by the tactical situation; however, we must not sacrifice our limited ability to conduct realistic, integrated ASW training prior to strike group deployment. Without appropriate relief, the mandatory 2200-yard shutdown will significantly impact COMPTUEX and JTFEX integrated ASW training and jeopardize the training and readiness of U.S. THIRD Fleet CSG/ESGs. These strike groups will then lack critically important skills to meet the full demands of the planned operational environment for real world missions.

Pursuant to 28 U.S.C. § 1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed this 13th day of January, 2008, at San Diego, California

By: /s/ ILLEGIBLE
SAMUEL J. LOCKLEAR III
COMMANDER, U.S. NAVY

[EXECUTED THIS 13TH DAY OF JANUARY 2008]

APPENDIX R

1. Marine Mammal Protection Act of 1972, 16 U.S.C. 1361 *et seq.*, provides in pertinent part:

§ 1362 Definitions

* * * * *

(6) The term "marine mammal" means any mammal which (A) is morphologically adapted to the marine environment (including sea otters and members of the orders Sirenia, Pinnipedia and Cetacea), or (B) primarily inhabits the marine environment (such as the polar bear); and, for the purposes of this chapter, includes any part of any such marine mammal, including its raw, dressed, or dyed fur or skin.

* * * * *

(10) The term "person" includes (A) any private person or entity, and (B) any officer, employee, agent, department, or instrumentality of the Federal Government, of any State or political subdivision thereof, or of any foreign government.

* * * * *

(13) The term "take" means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.

* * * * *

(18)(A) * * * *

(B) In the case of a military readiness activity (as defined in section 315(f) of Public Law 107-314; 16 U.S.C. 703 note) or a scientific research activity conducted by or on behalf of the Federal Govern-

ment consistent with section 1374(c)(3) of this title, the term "harassment" means—

(i) any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild; or

(ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered.

(C) The term "Level A harassment" means harassment described in subparagraph (A)(i) or, in the case of a military readiness activity or scientific research activity described in subparagraph (B), harassment described in subparagraph (B)(i).

(D) The term "Level B harassment" means harassment described in subparagraph (A)(ii) or, in the case of a military readiness activity or scientific research activity described in subparagraph (B), harassment described in subparagraph (B)(ii).

* * * * *

§ 1371. Moratorium on taking and importing marine mammals and marine mammal products

(a) Imposition; exceptions

There shall be a moratorium on the taking and importation of marine mammals and marine mammal products, commencing on the effective date of this chapter, during which time no permit may be issued for the tak-

ing of any marine mammal and no marine mammal or marine mammal product may be imported into the United States except in the following cases:

* * * * *

(f) Exemption of actions necessary for national defense

(1) The Secretary of Defense, after conferring with the Secretary of Commerce, the Secretary of the Interior, or both, as appropriate, may exempt any action or category of actions undertaken by the Department of Defense or its components from compliance with any requirement of this chapter, if the Secretary determines that it is necessary for national defense.

(2) An exemption granted under this subsection—

(A) subject to subparagraph (B), shall be effective for a period specified by the Secretary of Defense; and

(B) shall not be effective for more than 2 years.

(3)(A) The Secretary of Defense may issue additional exemptions under this subsection for the same action or category of actions, after—

(i) conferring with the Secretary of Commerce, the Secretary of the Interior, or both as appropriate; and

(ii) making a new determination that the additional exemption is necessary for national defense.

(B) Each additional exemption under this paragraph shall be effective for a period specified by the Secretary of Defense, of not more than 2 years.

(4) Not later than 30 days after issuing an exemption under paragraph (1) or an additional exemption under paragraph (3), the Secretary of Defense shall submit to the Committee on Armed Services of the House of Representatives and the Committee on Armed Services of the Senate notice describing the exemption and the reasons therefor. The notice may be provided in classified form if the Secretary of Defense determines that use of the classified form is necessary for reasons of national security.

* * * * *

§ 1372. Prohibitions

(a) Taking

Except as provided in sections 1371, 1373, 1374, 1379, 1381, 1383, and 1383a, and 1387 of this title and subchapter V of this chapter, it is unlawful—

(1) for any person subject to the jurisdiction of the United States or any vessel or other conveyance subject to the jurisdiction of the United States to take any marine mammal on the high seas;

* * * * *

2. Coastal Zone Management Act of 1972, 16 U.S.C. 1451 *et seq.*, provides in pertinent part:

§ 1456. Coordination and cooperation

* * * * *

(c) Consistency of Federal activities with State management programs; Presidential exemption; certification

(1)(A) Each Federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved State management programs. A Federal agency activity shall be subject to this paragraph unless it is subject to paragraph (2) or (3).

(B) After any final judgment, decree, or order of any Federal court that is appealable under section 1291 or 1292 of Title 28, or under any other applicable provision of Federal law, that a specific Federal agency activity is not in compliance with subparagraph (A), and certification by the Secretary that mediation under subsection (h) of this section is not likely to result in such compliance, the President may, upon written request from the Secretary, exempt from compliance those elements of the Federal agency activity that are found by the Federal court to be inconsistent with an approved State program, if the President determines that the activity is in the paramount interest of the United States. No such exemption shall be granted on the basis of a lack of appropriations unless the President has specifically requested such appropriations as part of the budgetary process, and the Congress has failed to make available the requested appropriations.

* * * * *

3. Natural Environmental Policy Act of 1969, 42 U.S.C. 44321 *et seq.*, provides in pertinent part:

§ 4331. Congressional declaration of national environmental policy

* * * * *

(b) In order to carry out the policy set forth in this chapter, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may—

(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;

(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;

(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

* * * * *

§ 4332. Cooperation of agencies; reports; availability of information; recommendations; international and national coordination of efforts

The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this chapter, and (2) all agencies of the Federal Government shall—

* * * * *

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of Title 5, and shall accompany the proposal through the existing agency review processes;

* * * * *

4. 40 C.F.R. 1506.11 provides:

Emergencies.

Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these regulations, the Federal agency taking the action should consult with the Council about alternative arrangements. Agencies and the Council will limit such arrangements to actions necessary to control the immediate impacts of the emergency. Other actions remain subject to NEPA review.

OPPOSITION BRIEF

FILED
MAY 23 2008
OFFICE OF THE CLERK
SUPREME COURT, U.S.

No. 07-1239

IN THE
Supreme Court of the United States

DONALD C. WINTER, Secretary of the Navy, *et al.*,
Petitioners,

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., *et al.*,
Respondents,

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

BRIEF IN OPPOSITION

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QUESTIONS PRESENTED

1. Whether the court of appeals erred in holding that the district court acted within its discretion in issuing a carefully tailored preliminary injunction, to address the Navy's violations of the National Environmental Policy Act, that permitted the Navy to conduct certain sonar training activities subject only to its implementation of limited and narrowly tailored mitigation measures for the protection of the marine environment that the court determined were feasible, appropriate, and posed a minimal burden on the Navy.

2. Whether the court of appeals erred in determining that the district court was not compelled to vacate a preliminary injunction in response to a determination by the Council on Environmental Quality ("CEQ") that the mitigation measures included in the injunction created an "emergency" that would prevent critical Navy training, where the CEQ determination was based on an *ex parte* factual presentation by the Navy that omitted and ignored the facts on which the district court based its determination that the interim relief would permit the Navy to effectively train and certify its troops, and the CEQ determination was neither authorized by the governing statute nor by CEQ's implementing "emergency" regulation.

RULE 29.6 STATEMENT

Respondents Natural Resources Defense Council, Inc.; International Fund for Animal Welfare; Cetacean Society International; League for Coastal Protection; and Ocean Futures Society have no parent and there are no publicly held companies that hold any stock of these respondents. Respondent Jean-Michel Cousteau is an individual.

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I. INTRODUCTION

In 2006, the Navy decided not to prepare an Environmental Impact Statement ("EIS") to evaluate its planned use of high intensity mid-frequency active ("MFA") sonar during 14 major training exercises off the coast of southern California ("SOCAL exercises"). Respondents advised the Navy as early as 2004 that the National Environmental Policy Act ("NEPA") required the Navy to prepare an EIS or reduce to insignificance the environmental effects its sonar training would cause. When the Navy refused to comply, Respondents brought lawsuits to enforce NEPA's requirements for these and similar exercises. In mid-2006 the Navy was enjoined from proceeding with sonar exercises in Hawaii because the Navy had failed to prepare an EIS and the Navy's proposed mitigation failed to prevent significant environmental harm. The Navy settled that litigation with a consent decree that obligated the Navy to employ enhanced mitigation measures and then successfully trained using those measures.

Despite learning in the Hawaii case that an EIS is required and that additional mitigation measures are both necessary and feasible, the Navy chose to press ahead without an EIS for the SOCAL exercises at issue in this case, and also backslid on mitigation, refusing to incorporate even the proven mitigation measures agreed to in Hawaii. The result for the SOCAL exercises was predictable: the Navy was enjoined again for failure to comply with NEPA.

The district court determined – after reviewing a record consisting of thousands of pages of scientific evidence, expert declarations, and the Navy's own internal documents – that Respondents had

demonstrated a "strong likelihood" of prevailing on the merits and a "near certainty" of irreparable harm from the proposed SOCAL exercises.

After the Navy appealed those findings and lost, the district court addressed in detail the selection of mitigation measures that would minimize irreparable harm and allow the sonar training to proceed. The court received additional briefing and evidence, and toured a Navy destroyer to better understand the Navy's training needs and the effects of the proposed mitigation on the Navy's training. Much of the evidence bearing on mitigation was drawn from the Navy's own records of prior exercises in which the Navy successfully trained its sailors in sonar use using mitigation methods that were similar or identical to those the court eventually ordered. The court determined that the Navy's post-litigation assertions that it could not train using the ordered mitigation measures were contradicted by the pre-litigation record. It then issued a narrowly tailored preliminary injunction requiring the Navy to implement six additional mitigation measures, after making specific findings that these measures would not prevent the Navy from training and certifying its troops, and were practicable based on the Navy's own internal documents regarding its past mitigation practices.

The court of appeals affirmed each of the district court's conclusions, as well as the district court's balancing of the harms and public interest, under this Court's well-settled "abuse of discretion" standard for reviewing preliminary injunctions.

Petitioners complain that the district court and the court of appeals did not sufficiently defer to the Navy's views, nor to the views of the White House

and its Council on Environmental Quality ("CEQ") after Petitioners appealed to the Executive Branch to undo the injunction. In doing so, Petitioners make much of contrary factual determinations and watered-down mitigation suggested by CEQ after a post-injunction "consultation" between the Navy and CEQ which failed to consider the evidence underlying the district court's findings that the Navy could train effectively with the required mitigation measures. The district court and court of appeals rejected this argument, correctly seeing CEQ's litigation-driven "consultation" for what it was: a hasty, one-sided, and incomplete proceeding without basis in either NEPA or CEQ's own regulations. The district court acted within its equitable discretion in determining that the CEQ action did not require the court to vacate its injunction.

Petitioners fail to identify any legal issue appropriate for certiorari. The application of the standards for preliminary injunctive relief, agency deference, and equitable discretion to the complex factual record developed in the district court presents neither a novel issue of law nor a conflict with the holdings of this Court or a sister circuit. Accordingly, the petition should be denied.

II. STATEMENT OF THE CASE

1. The ocean areas off southern California are among the richest and most biologically diverse in the world. App. 11a. They contain at least 37 species of marine mammals, including a globally important population of endangered blue whales; and have been identified by biologists as one of the world's "key areas" for beaked whales, which the Navy acknowledges are acutely vulnerable to injury from

sonar. *Id.* The SOCAL exercises flood this unique and fragile southern California marine environment with harmful levels of high-intensity sonar noise. Respondents sought implementation of commonsense protective measures to limit the serious predicted impacts on the SOCAL marine environment.

There is no dispute that the Navy's use of MFA sonar can kill, injure, and disturb many marine species, including marine mammals. App. 11a-16a, 76a. Much of the evidence of the serious harm caused by MFA sonar to marine mammals – including widespread disruption, mass injury, and death – is recited in the lower courts' opinions in this case. App. 11a-16a, 156a-157a, 202a-206a. This harm is especially acute in beaked whales, many of which stranded and died on the shores of the Bahamas in 2000 following a naval sonar training exercise. Those whales and others killed in similar incidents were found to have suffered physical trauma as a result of sonar exposure, including hemorrhaging around the brain, ears, and other tissues. App. 15a-16a 205a-206a.

2. On August 7, 2007, the district court preliminarily enjoined the Navy from using MFA sonar during the remaining SOCAL exercises. The court found that NRDC had shown a "strong likelihood" of success on its claims that the Navy violated NEPA on at least three independent grounds, including its failure to prepare an EIS despite the potential for significant environmental impacts evidenced in the Navy's own EA. App. 200a-211a. The court also found that the Navy had likely violated the Coastal Zone Management Act ("CZMA") by failing to apply for a "consistency determination"

from the California Coastal Commission for its sonar activities, and by refusing to implement mitigation necessary to achieve consistency with the California Coastal Act. App. 211a-215a; 16 U.S.C. §§ 1451 *et seq*. The court further found that the SOCAL exercises, as planned, presented a "near certainty" of irreparable harm absent injunctive relief. App. 75a, 164a, 217a.

In reaching these conclusions, the district court deferred to the Navy's estimates of harm in its EA – which the EA asserts are based on the "best available science" – despite the court's acknowledgement of the considerable evidence that the Navy's methodology underestimated impacts to marine species. App. 20a, 63a, 205a-206a. The EA predicts that sonar use during these exercises will cause 466 permanent injuries of beaked whales, including 436 injuries of Cuvier's beaked whales in a stock estimated by NMFS to be as small as 1,121 individual animals. App. 19a, 204a. The EA also predicts approximately 170,000 instances of disruptive "harassment," a category of harm that is defined in the Marine Mammal Protection Act ("MMPA") to exclude biologically insignificant effects. App. 64a, 204a; 16 U.S.C. § 1362(18)(B)(ii).

The district court noted that its order should have come as no surprise to the Navy, given that in July 2006 – long before the Navy submitted its flawed environmental analysis for the SOCAL exercises – it had been ordered to halt another sonar training exercise, Rim of the Pacific 2006 ("RIMPAC") (a major exercise off the Hawaiian Islands), for failure to prepare an EIS. App. 207a-208a. That injunction was based on substantially the same NEPA violations

found here, including a finding that the Navy's proposed mitigation was inadequate. *Id.*; App. 26a. The Navy's EA for the SOCAL exercises projected roughly *five times* as many "takes" of marine mammals as the previously-enjoined RIMPAC exercise. App. 204a, SER2 186 (C.A. No. 07-56157). Nonetheless, the Navy proposed *even less* mitigation for the SOCAL exercises (i) than the court had found to be inadequate in the proposed RIMPAC exercise and (ii) than the Navy had utilized, without reported adverse affects on training, in the eventual RIMPAC exercise conducted pursuant to a consent decree and in numerous other exercises conducted later that year. App. 33a, 72-73a, 210a.

The district court found here that an EIS was required because the Navy's proposed mitigation measures would not ameliorate the significant environmental effects of its exercises. App. 207a-208a. While the Navy claimed to have implemented "29 protective measures," the court found that virtually all of those measures govern implementation of a single "safety zone" provision, which requires the Navy to temporarily power-down or shut-down its sonar if marine mammals are detected within, respectively, 1000 yards and 200 yards of a sonar source. App. 32a-33a, 102a. The district court concluded that the Navy's safety zone was "grossly inadequate to protect marine mammals from debilitating levels of sonar exposure" (App. 140a), and that the Navy's mitigation scheme as a whole was "woefully inadequate and ineffectual" (App. 215a).

3. On November 3, a merits panel of the court of appeals affirmed the district court's determination

that Respondents were entitled to injunctive relief in light of the Navy's prospective violations of federal law and the likelihood of irreparable harm to the marine environment from the challenged activities. Nevertheless, noting "the Navy's past use of additional mitigation measures" and "the district court's longstanding involvement with this matter and its familiarity with the effectiveness and practicability of available mitigation measures," the court remanded for the lower court to issue a tailored injunction that would "provide satisfactory safeguards for the protection of the environment" while permitting the Navy to train effectively. App. 172a-174a.

On remand, the district court ordered further briefing and evidentiary submissions, reviewed "thousands of pages of documents and briefs" (App. 147a), and toured sonar facilities aboard the *USS Milius* in San Diego in order to assess the feasibility of proposed mitigation measures (App. 6a, 102a).

On January 3, the court issued a tailored preliminary injunction imposing six additional mitigation measures that the Navy had not included in its EA. App. 34a-35a, 138a-144a. In crafting its order, the court expressly acknowledged and affirmed the government's national security concerns (*see* App. 35a, 103a-104a), but concluded that none of the additional measures would prevent the Navy from effectively training and certifying its troops (*see* App. 79a-81a; 135a-136a).

The district court reviewed extensive evidence showing that the Navy has employed these or similar measures – and, in some cases, more restrictive measures – during its major exercises in the past,

without sacrificing training objectives. App. 136a, 185a. The district court rejected many of NRDC's proposed mitigation measures as too sweeping or as creating an undue burden on training. App. 35a, 79a, 103a-105a. With respect to the measures it ordered, however, Petitioners' claims that the challenged measures create an "unacceptable risk" were contradicted by evidence in the record, "much of it submitted by the Navy itself, [which] supports the district court's conclusion that the challenged mitigation measures will not likely compromise the Navy's ability to effectively train and certify its west-coast strike groups." App. 80a-81a.

4. On January 10, 2008, after its unsuccessful litigation in the district court, the Navy initiated an *ex parte* proceeding before the White House CEQ in an attempt to overturn the district court's order. App. 55a. Three business days later, after reviewing an incomplete record containing only the Navy's selected evidence and arguments and omitting virtually all of the evidence and argument that had compelled the district court and court of appeals to rule as they did, CEQ determined that "emergency circumstances" were present and ordered "alternative arrangements" for the SOCAL exercises under the alleged regulatory authority of 40 C.F.R. § 1506.11. App. 240a-241a. CEQ determined, based on the Navy's one-sided evidence and private "discussions between our staffs," "that the Navy cannot ensure the necessary training . . . under the terms of the injunctive orders." App. 240a. CEQ then suggested its own mitigation measures in place of the court's measures and NEPA's statutory requirements. App. 241a-247a. Those measures are virtually identical to those that the district court held "woefully

inadequate and ineffectual." *Compare* App. 215a *with* 107a. Also on January 15, President Bush signed a memorandum purporting to exempt the Navy's activities from the CZMA. App. 231a-232a.

Later on January 15, 2008, within minutes of the CEQ determination, the Navy moved to vacate the injunction based on CEQ's action. On February 4, the district court denied the Navy's motion. The court found that CEQ's unprecedented application of its "emergency" regulation to rescue an agency from a foreseeable court order, resulting from the agency's failure to prepare NEPA documentation for long-planned, routine actions, contravened both NEPA and the CEQ regulation and was therefore *ultra vires*. App. 112a-122a. It also found that both the NEPA waiver and CZMA exemption, as applied, raised serious constitutional concerns, though it declined to reach those issue under the doctrine of constitutional avoidance. App. 122a-135a.

On March 31, the court of appeals issued a 106-page opinion affirming the district court's preliminary injunction.

III. REASONS FOR DENYING THE PETITION

A. Granting Limited Preliminary Relief Was Well Within the District Court's Equitable Discretion

The district court determined, after an exhaustive review of thousands of pages of evidence, that there was a "near certainty" that the SOCAL exercises would cause widespread, irreparable harm to the environment and that the Navy's planned mitigation was "woefully inadequate." The court further found,

after again reviewing thousands of pages of evidence, that the injunction would be a minimal imposition on the Navy's planned training. These factual findings led the district court to exercise its equitable discretion to fashion limited and appropriate interim relief to address the Navy's violations. Petitioners fail to identify any issue fit for this Court's review arising from the district court's exercise of its equitable discretion.

1. Petitioners assert that Congress' enactment of a defense readiness exemption to the MMPA strips the federal courts of equitable discretion to issue tailored injunctions in NEPA cases when Navy actions threaten significant harm to marine mammals. This novel argument ignores the traditional equitable discretion of the federal courts, the plain language of the NEPA statute, and Congress' actual approach to granting exemptions under NEPA.

This Court has long held that it is the province and duty of the federal courts to balance the equities except where Congress has issued a "clear and valid legislative command" displacing the courts' traditional equitable discretion or overriding provisions of federal law. *Porter v. Warner Holding Co.*, 328 U.S. 395, 398 (1946); *see also United States v. Oakland Cannabis Buyers' Coop.*, 532 U.S. 483, 496 (2001); *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 313 (1982) ("Congress may intervene and guide or control the exercise of the courts' discretion, but we do not lightly assume that Congress has intended to depart from established principles.").

When Congress enacted the MMPA exemption, it issued a "clear and valid legislative command"

granting the executive the limited power to exempt agencies from MMPA compliance, but only MMPA compliance. The MMPA exemption provides:

> The Secretary of Defense . . . may exempt any action or category of actions undertaken by the Department of Defense or its components from compliance with *any requirement of this chapter*, if the Secretary determines that it is necessary for national defense.

16 U.S.C. § 1371(f)(1) (emphasis added). This MMPA-specific language can hardly be taken as a "clear and valid legislative command" to alter the courts' equitable discretion when enforcing the requirements of other statutes, including NEPA.

Congress has granted no similar exemption from NEPA requirements. Instead, under the statutory scheme that Congress has established, Congress, not the executive, is the arbiter of when specific planned activities should be exempted from normal NEPA procedures. Congress retains the power to exempt planned military activities from NEPA compliance, and has used that reserved power when necessary. *See, e.g.*, Fiscal Year 2001 National Defense Auth. Act, Pub. L. No. 106-398, § 317, 114 Stat. 1654, 1654A-57 (2000) (specifically exempting Defense Department from preparing nationwide EIS for low-level flight training); 42 U.S.C. § 10141(c) (exempting EPA from NEPA review of criteria for handling spent nuclear fuel and high-level radioactive waste); 43 U.S.C. § 1652(d) (exempting construction of Trans-Alaska Pipeline from further NEPA compliance).

Even if one looks beyond the plain language of the statute and Congress' exercise of its reserved power to the legislative histories of NEPA and the MMPA,

there is no evidence to support Petitioners' argument that Congress meant the MMPA exemption to strip the courts of their authority to enforce NEPA requirements. H.R. Conf. Rep. No. 354, 108th Cong. 1st Sess. 669 (2003) (specifying that exemption applies to MMPA). Indeed, the injunction in *NRDC v. Evans*, 232 F. Supp. 2d 1003, 1053-54 (N.D. Cal. 2002), which Petitioners note played a role in Congress' enactment of the MMPA exemption, granted injunctive relief under *both* the MMPA and NEPA. Yet Congress chose neither to enact a NEPA exemption, nor to suggest any limitation on appropriate relief. Courts should be "[u]nwilling to view this omission as an accident." *Oakland Cannabis*, 532 U.S. at 493. The Navy's speculation about Congressional intent is thus unsupported by the statutory language, the statutory scheme, or the legislative history of the statutes in question.

2. The Navy next argues, citing *Weinberger v. Romero-Barcelo*, 456 U.S. 305 (1982), that because NEPA is a procedural statute the lower court goes too far in ordering relief beyond a simple mandate to prepare an EIS. Petitioners' Brief ("Pet.") at 24-25. To the contrary, *Romero-Barcelo* affirmed the rule, discussed above, that absent a clear congressional directive to the contrary, district courts sitting in equity retain their "traditionally broad discretion in deciding appropriate relief." 456 U.S. at 310, 316.

> [T]he comprehensiveness of this equitable jurisdiction is not to be denied or limited in the absence of a clear and valid legislative command. Unless a statute in so many words, or by a necessary and inescapable inference, restricts the court's jurisdiction in equity, the

> full scope of that jurisdiction is to be recognized and applied.

Id. at 313 (*quoting Porter*, 328 U.S. at 398); *see also Lemon v. Kurtzman*, 411 U.S. 192, 200 (1973). *Romero-Barcelo* thus *affirms*, rather than limits, a district court's equitable discretion. *See NRDC v. Southwest Marine, Inc.*, 236 F.3d 985, 1000 (9th Cir. 2000).

Moreover, although Congress chose procedural mechanisms rather than substantive restrictions to achieve NEPA's goals, Congress made clear that those procedures – *e.g.*, requiring agencies to undertake thorough environmental analyses before taking actions significantly affecting the environment – were enacted to further substantive environmental objectives and to "promote efforts which will prevent or eliminate damage to the environment." 42 U.S.C. § 4321; *see also* 40 C.F.R. § 1500.1(a) (NEPA is "our basic national charter for protection of the environment"). Indeed, for over three decades the federal courts have balanced the equities in NEPA cases, including cases raising significant military readiness concerns, and have fashioned interim relief where appropriate and where doing so would further the goals of the statute. *See, e.g., I-291 Why? Ass'n v. Burns*, 517 F.2d 1077 (2d Cir. 1975); *Arlington Coal. on Transp. v. Volpe*, 458 F.2d 1323 (4th Cir. 1972), *cert. denied*, 409 U.S. 1000 (1972); *Citizen Advocates For Responsible Expansion, Inc. (I-Care) v. Dole*, 770 F.2d 423 (5th Cir. 1985); *'Ilio'Ulaokalani Coal. v. Rumsfeld*, 464 F.3d 1083, 1086 (9th Cir. 2006); *Davis v. Mineta*, 302 F.3d 1104 (10th Cir. 2002); *NRDC v. Morton*, 458 F.2d 827 (D.C. Cir. 1972); *Foundation of*

Econ. Trends v. Weinberger, 610 F. Supp. 829, 843-44 (D.D.C. 1985).

In short, to hold that the district court lacked equitable discretion here would be contrary to the statutory scheme that Congress enacted, would thwart Congress' stated goals, and would displace over three decades of practice in the federal courts of balancing the equities in NEPA cases.

3. Petitioners (joined by *amici*) next argue that this case presents the question whether an injunction can issue upon a mere showing that there is a "possibility of irreparable harm." That issue is irrelevant here. The district court found, and the court of appeals affirmed, that there was a *near certainty* of irreparable harm – a showing that far exceeds that required under *any* applicable standard or balancing test.

The district court's finding that NRDC had established "to a near certainty" irreparable harm "to the environment and Plaintiffs' standing declarants," as well as widespread irreparable species-level harm (App. 216a-217a), was amply supported by the record. As shown above, NRDC submitted extensive scientific evidence showing that MFA sonar causes serious, debilitating, and even lethal injuries to marine mammals and other species (*supra* § II). Petitioners do not contend that the district court's reliance on this mountain of evidence was clearly erroneous. Indeed, as the district court found, *even accepting the Navy's own take estimates in its EA*, the SOCAL exercises, as planned, presented a "near certainty" of widespread, irreparable harm and the Navy's proposed mitigation would be "woefully inadequate

and ineffectual" in preventing such harm. App. 217a, 215a.

The Ninth Circuit affirmed the district court's finding of a "near certainty" of irreparable harm under the well-settled abuse of discretion standard. App. 75a-77a. Petitioners' suggestion that the court of appeals somehow rejected the district court's finding, and instead made and relied on an independent finding of a "mere possibility" of harm (Pet. 28 n.3), ignores the court of appeals' affirmation that "the scientific studies, declarations and reports in the record confirm the district court's determination that irreparable harm to marine mammals will *almost certainly* result should the Navy be permitted to conduct its remaining exercises without appropriate mitigation measures." App. 87a (emphasis added).[1]

Besides being irrelevant, the argument of Petitioners and *amici* that the "possibility of harm standard" conflicts with the standard for preliminary injunctions employed by other circuits is considerably overstated.[2] While the circuits employ varying

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[1] The court of appeals, like the district court, also rejected Petitioners' assertion that only species-level harm can be irreparable – for which Petitioner's sole support consists of two cases holding merely that harm to a *single animal* was not sufficient. App. 77a; Pet. 27-28; *see, e.g., Greater Yellowstone Coalition v. Flowers*, 321 F.3d 1250, 1256 (10th Cir. 2003) (holding that destruction of three bald eagle nests constituted irreparable harm). Nevertheless, the Ninth Circuit further held that even if a demonstration of irreparable injury at the "species-level" were required, NRDC met that burden here. App. 77a.

[2] This Court recently denied the Solicitor General's petition for certiorari on precisely this issue. *Earth Island Inst.*

terminology for the preliminary injunction calculus, all of these linguistic formulations express the same underlying equitable principle and none conflicts substantively with the Ninth Circuit's "possibility" formulation. In fact, three of the circuits on which Petitioners rely have used the "possibility" formulation. *See Pashaian v. Eccelston Properties, Ltd.*, 88 F.3d 77, 85 (2d Cir. 1996) (plaintiff must "demonstrate that [he was] likely to suffer possible irreparable harm") (internal quotation omitted); *Multi-Channel TV Cable Co. v. Charlottesville Quality Cable Operating Co.*, 22 F.3d 546, 552 (4th Cir. 1994) (irreparable injury prong satisfied "when the failure to grant preliminary relief creates the possibility of permanent loss"); *Martinez v. Mathews*, 544 F.2d 1233, 1243 (5th Cir. 1976) (preliminary relief requires showing "the possibility of irreparable harm"). Indeed, this Court has affirmed injunctions based on a "possibility" or "likelihood" of irreparable harm. *See Brown v. Chote*, 411 U.S. 452, 456 (1973) (the district court "properly addressed itself to two relevant factors: first, the appellee's possibilities of success on the merits; and second, the possibility that irreparable injury would have resulted, absent interlocutory relief"); *Ashcroft v. ACLU*, 542 U.S. 656, 666 (2004) ("likelihood").

The Ninth Circuit's "possibility" standard, like the standard in most circuits, represents one end of a sliding scale whereby a higher showing on the merits reduces the required showing of harm, and vice versa. *See Save Our Sonoran, Inc. v. Flowers*, 408 F.3d 1113, 1120 (9th Cir. 2005); 11A Charles Alan Wright,

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v. U.S. Forest Serv., 442 F.3d 1147 (9th Cir. 2006) *cert. denied*, 127 S.Ct. 1829 (2007).

Arthur R. Miller & Mary Kay Kane, Federal Practice and Procedure § 2948.3 (2d ed. 1995). The Ninth Circuit joins all circuits in rejecting assertions of irreparable harm that are merely "speculative," "remote," "tenuous," "insignificant," or "insubstantial." *See Paramount Land Co. v. Cal. Pistachio Comm'n*, 491 F.3d 1003, 1012 (9th Cir. 2007) (vacating preliminary injunction); *Goldie's Bookstore, Inc. v. Superior Court*, 739 F.2d 466, 472 (9th Cir. 1984) (same); *see also* App. 75a-76a (rejecting Petitioners' assertion that irreparable harm in this case is merely "speculative").

None of the cases relied on by Petitioners demonstrates a meaningful conflict between the equitable balancing that occurs in the Ninth Circuit and that which occurs elsewhere. Chancellors in equity may express themselves differently, but all the formulations target the same equitable considerations. Petitioners' "conflicting" cases are either distinguishable on their facts or just different ways of saying essentially the same thing. For instance, *Direx Israel, Ltd. v. Breakthrough Med. Corp.*, 952 F.2d 802 (4th Cir. 1991), on which Petitioners rely, required a "clear showing" of irreparable injury, but cited the "likelihood of irreparable harm" as the standard to which this "clear showing" applies. *Id.* at 812; *see also Cordis Corp. v. Medtronic, Inc.*, 780 F.2d 991, 996 (Fed. Cir. 1985) (holding merely that the alleged injuries, *viz.*, patent damages and license fees, were not irreparable); *Borey v. Nat'l Union Fire Ins. Co.*, 934 F.2d 30, 35 (2d Cir. 1991) (holding only that the asserted injury – "potential monetary loss" – was not irreparable); *Siegel v. LePore*, 234 F.3d 1163, 1176-77 (11th Cir. 2000) (reciting a "substantial likelihood"

standard and affirming denial of injunctive relief because "threat" of harm was "wholly speculative"). Indeed, as seen above, three of the circuits on which Petitioners rely in suggesting a conflict also employ the "possibility" formulation.

Petitioners attempt to stretch language from *Doran v. Salem Inn, Inc.*, 422 U.S. 922 (1975) ("will suffer irreparable injury"), to suggest that only a showing of "actual harm" is sufficient for injunctive relief. Pet. 29. Petitioners' reading of *Doran* is belied by the result in that case, which found the irreparable harm standard met by the *possibility* that respondents would go bankrupt absent an injunction of the challenged ordinance. *Doran*, 422 U.S. at 932. Moreover, Petitioners' proffered standard – which would require plaintiffs to demonstrate the impossible: a certainty that actual harm will occur in the future – is contrary to this Court's jurisprudence (*Brown* and *Ashcroft*) and the standards used by every circuit court.

In short, the court of appeals' affirmance of the district court's finding of a "near certainty" of irreparable harm presents no issue that calls for this Court's review.

4. Contrary to Petitioners' assertions, the courts below properly weighed the "magnitude" of potential harm to the Navy, and gave both due deference and appropriate evidentiary scrutiny to the Navy's claims of harm in balancing the equities and carefully tailoring the mitigation order. As the court of appeals concluded, "there is significant evidence of the Navy's ability to successfully train and certify its strike groups under the conditions imposed by the district court." App. 86a.

As an initial matter, apart from two of the district court's measures – the safety zone and surface-ducting provisions – Petitioners have not even attempted to show concrete harm stemming from other aspects of the court's injunction. Indeed, the Navy has employed (assuming it is abiding by the court's injunction) the other four mitigation measures ordered by the district court during its three most recent SOCAL exercises, and it has not sought a stay of those measures. Thus, the Navy does not seriously contest the bulk of the mitigation measures ordered by the district court and affirmed by the court of appeals.

As to the safety zone and surface-ducting restrictions, there was abundant evidence supporting the district court's conclusion that those two measures were practicable, effective, and in the public interest. The feasibility of the 2200-yard safety zone is well-supported by the record. App. 82a-85a. The Navy has repeatedly implemented similar safety zones during other similar exercises and routinely employs a 2200-yard safety zone for low-frequency sonar training. App. 85a. The Navy's own after-action reports for the SOCAL exercises confirm that the 2200-yard measure would require the Navy to reduce its sonar only "approximately one more time per exercise" – far less than the five-fold increase that the Navy has misleadingly claimed. App. 84a. Still, the Navy claims that the number of shutdowns stated in its own after-action reports should be discounted because, it speculates, some of these shutdowns may have occurred during non-critical times. Pet. 31-32. But, as the court of appeals observed, this claim, too, is belied by the after-action reports, which "do not distinguish

between [critical and non-critical] shutdown events in evaluating training impacts" and thus provide no factual basis for that speculation. App. 84a n.65.

The Navy's claim that the six-decibel power-down measure during significant surface-ducting conditions will "prevent realistic training" (Pet. 32) is also contradicted by the factual record. Although Petitioners assert that "[t]raining in significant surface-ducting conditions is 'critical'" (Pet. 10), the Navy trained and certified its troops during all major exercises in SOCAL since July 2006 for which reports were released *despite the complete absence of these conditions*. App. 86a. Petitioners also speculate that this measure could disrupt training because surface-ducting could occur at an important time during the exercise. But none of the Navy's own 29 mitigation measures currently required by the Secretary of Defense – nor the surface ducting measure that it routinely employed during all exercises prior to January 2007 – contains a "critical times" exception. SER 183, 194-97. Moreover, the Navy regularly used similar, and even more onerous, power-downs in other conditions during previous exercises and was able to continue to train effectively despite such requirements (SER 186) – indeed, the Navy's current scheme contemplates that it will be able to continue to train effectively despite using power-downs as part of its safety zone. App. 225a-227a.

Petitioners nonetheless argue that the district court failed to give proper deference to the Executive's national security concerns in tailoring the injunction. Petitioners' view that deference to the Executive's military judgment is essentially absolute is contrary to this Court's long-established precedent.

App. 81a; *see Duncan v. Kahanamoku*, 327 U.S. 304, 322-23 (1946). Even in cases involving significant national security concerns, "deference is not equivalent to acquiescence" and courts have a duty to independently assess such claims and weigh them against competing interests. *Campbell v. U.S. Dep't of Justice*, 164 F.3d 20, 30 (D.C. Cir. 1998); *Coldiron v. U.S. Dep't of Justice*, 310 F. Supp. 2d 44, 53 (D.D.C. 2004). Judicial review of Executive assertions of harm takes on even greater importance in turbulent times when the balance of powers is most vulnerable to overreaching by the Executive. *See Duncan*, 327 U.S. at 322-23; *cf. Hamdan v. Rumsfeld*, 126 S. Ct. 2749, 2799 (2006) (Kennedy, J., concurring).

Here, the district court gave credence to the Navy's assertions of harm whenever plausible in light of the record, and rejected many of the measures that Respondents proposed based on the Navy's asserted training needs. *See, e.g.*, App. 103a-104a (opting to "forego broad geographical exclusions in favor of . . . a larger 'safety zone'" and more effective monitoring; rejecting limitations on nighttime and low-visibility training based on deference to Navy's asserted training needs). But while the Judiciary's review is deferential, it must also be meaningful. *Campbell*, 164 F.3d at 30 ("[D]eference is not equivalent to acquiescence."); App. 81a ("Nevertheless, a court's deference is not absolute, even when a government agency claims a national security interest."). As the court of appeals found, although the district court did not simply "acquiesce" in Petitioners' assertions, it gave ample deference to the Executive's expressed concerns. App. 79a-88a. The court of appeals thus properly affirmed this aspect of the district court's order.

Finally, while Petitioners attempt to couch their disagreement with the district court's fact-bound determinations as a legal issue regarding the application of "established equitable principles," Petitioners do not and cannot assert that the courts below failed to both recognize and apply these principles to the facts. Under the abuse of discretion standard, reviewing courts "are bound by the district court's resolution of conflicting evidence and other findings of fact." *FTC v. Simeon Mgmt. Corp.*, 532 F.2d 708, 711 (9th Cir. 1976) (Kennedy, J.); *see also Anderson v. City of Bessemer City, N.C.*, 470 U.S. 564, 573-74 (1985). And "application of law to fact . . . is left to the factfinder, subject to limited review" even if there is "some tension in the various findings made by the courts below" *Exxon Co., U.S.A. v. Sofec, Inc.*, 517 U.S. 830, 840-41 (1996) (citations omitted).

The Navy relied almost exclusively on declarations prepared in the course of litigation. The district court was well within its discretion in crediting the voluminous substantive evidence submitted by Respondents of the Navy's actual past practices and statements predating the litigation, and in finding, with respect to the measures that it imposed, that the evidence in the record outweighed the Navy's assertions of harm. *See District of Columbia v. Murphy*, 314 U.S. 441, 456 (1941); *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 212-13 (1988); *Burger v. Kemp*, 483 U.S. 776, 806 n.11 (1987). Accordingly, further review of these fact-bound determinations is unwarranted.[3]

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[3] The court of appeals also noted that "in the unlikely event" that the Navy is unable to train and certify its troops

B. The Court of Appeals Properly Rejected Petitioners' Reliance on CEQ's Invalid "Alternative Arrangements"

Petitioners assert that the district court was required to vacate its injunction after CEQ "consulted" with the Navy and proposed "alternative arrangements" for complying with NEPA, and the Navy agreed to abide by CEQ's proposal. The CEQ regulation on which Petitioners rely reads in its entirety:

> **Emergencies.** Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these regulations, the Federal agency taking the action should consult with the Council about alternative arrangements. Agencies and the Council will limit such arrangements to actions necessary to control the immediate impacts of the emergency. Other actions remain subject to NEPA review.

40 C.F.R. § 1506.11.

After reviewing the effect of CEQ's actions on the factors bearing on the issuance of interim relief, the court of appeals correctly concluded that CEQ's action did not require the federal court to vacate its injunction. *First*, CEQ's factual findings were likely invalid under the APA because CEQ ignored all of the evidence in the extensive district court record that had persuaded the court that the tailored injunction would *not* prevent the Navy from effectively training and

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using the prescribed mitigation, the Navy "may return to the district court to request relief on an emergency basis." App. 89a.

certifying its troops. *Second*, CEQ's application of its regulation to the facts at issue could not be squared with the language and purpose of the governing statute, NEPA. *Third*, CEQ's unprecedented extension of its regulation to undo a district court's injunction grossly exceeded the "emergency" scope of CEQ's own regulation.

1. The court of appeals found that there was a serious question as to whether CEQ's action was invalid under the APA because the agency's fact-finding procedures and factual findings themselves were seriously and fundamentally flawed.[4] The court of appeals correctly questioned whether CEQ's flawed factual determinations were "arbitrary and capricious." App. 54a-55a.

CEQ's fact-finding "procedure" in this case consisted of summarily reviewing what it *knew* was an incomplete and partial record, and ignoring the extensive contrary evidence that was readily available. CEQ's findings were made after a closed *ex parte* proceeding in which CEQ considered a "record" consisting of only the Navy's evidence and arguments, omitting all contrary evidence. *See* App. 237a. As the court of appeals noted, CEQ deliberately ignored (or, at a minimum, failed to consider) the voluminous substantive evidence that the district court found persuasive and relied on in issuing its injunction. App. 54a-55a. *See Motor*

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[4] The court's review of Petitioners' reliance on CEQ's actions, at this preliminary stage, did not require the court to reach a final determination regarding the validity of CEQ's action, but only to assess the effect, if any, of CEQ's action among the other factors bearing on the issuance of preliminary relief. *See Ashcroft*, 542 U.S. at 666.

Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co., 463 U.S. 29, 43 (1983) (holding that agencies cannot "entirely fail[] to consider an important aspect of the problem" or fail to "examine the relevant data"); *Advocates for Highway and Auto Safety v. Fed'l Motor Carrier Safety Admin.*, 429 F.3d 1136, 1147 (D.C. Cir. 2005) (striking down agency action where the agency "simply disregarded volumes of evidence" contrary to its decision).

Based on this parody of objective fact-finding, CEQ went on to find that "the injunctive orders prevent the Navy from providing Strike Groups with adequate proficiency training and create a substantial risk of precluding certification," and on this basis concluded that an "emergency" existed under Section 1506.11. App. 238a-239a. This conclusion, as well as other factual conclusions of the agency (App. 234a, 238a-239a), directly contradicts the district court's finding, supported by a complete record, that the injunction would *not* prevent the Navy from effectively training and certifying its troops. *See* App 79a. Moreover, CEQ's cursory review of a partial record led it to predicate its finding of "emergency circumstances" on the false notion that the district court's order worked a complete prohibition on training. *See* App. 240a (" . . . failure to conduct this training exercise will have immediate ramifications ..."), ignoring that the tailored injunction permitted the Navy to train with mitigation in place. This error is perhaps not surprising given the Navy's continued perpetuation of this fiction throughout its petition. *See, e.g.*, Pet. 17, 24, 25 (stating that the injunction proscribes the Navy from "conduct[ing] vital military exercises" until it completes an EIS; "prohibit[s] the

Navy's sonar use"; and "bar[s] the use of MFA sonar").

It is difficult to review the CEQ's procedure and analysis without concluding that CEQ was focused less on fact-finding than on providing ammunition for further litigation over the injunction. CEQ's fact-finding and analysis were arbitrary and capricious at best, and its issuance of alternative arrangements based on its hasty and one-sided review of the evidence did not compel the court to vacate its injunction.

2. Administrative agencies have no authority to interpret their regulations in a manner inconsistent with their governing statutes. *Stinson v. United States*, 508 U.S. 36, 45 (1993); *United States v. Larionoff*, 431 U.S. 864, 873 (1977). The court of appeals correctly concluded that if CEQ's emergency regulation were interpreted as broadly as Petitioners suggest, it would be contrary to NEPA and *ultra vires*. App. 50a-54a. The court properly construed the regulation narrowly to avoid this conflict. *Id.* Petitioners do not address, much less show error in this aspect of the Ninth Circuit's analysis, which forms an independent basis for the court's decision.

Congress enacted NEPA, "our basic national charter for protection of the environment" (40 C.F.R. § 1500.1(a)), to ensure that federal agencies "promote efforts which will prevent or eliminate damage to the environment." 42 U.S.C. § 4321. NEPA requires federal agencies to prepare an EIS for any major federal action "significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). Even significant national security concerns are insufficient to trump this clear statutory mandate.

Unlike other environmental statutes, NEPA contains no national security exemption. *See San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm'n*, 449 F.3d 1016, 1035 (9th Cir. 2006) ("There is no 'national defense' exception to NEPA.").

As shown above, Congress has reserved the power to decide when long-planned, specific activities should be immune from NEPA's requirements. *See supra* § III(A)(1) (and exemptions noted). In light of Congress' reservation of such NEPA-exemption authority to itself, the courts below properly declined to construe the CEQ regulation "so broadly as to independently authorize CEQ to do the same." App. 50a.[5]

NEPA requires all federal agencies – including the military – to comply with NEPA's substantive requirements "to the fullest extent possible." 42 U.S.C. § 4332. NEPA's "fullest extent possible" language requires compliance unless there is an "irreconcilable and fundamental conflict" between NEPA's requirements and those of another statute. *Flint Ridge Dev. Co. v. Scenic Rivers Ass'n of Okla.*, 426 U.S. 776, 787-88 (1976). CEQ itself interprets section 4332 to mean that "each agency of the Federal Government shall comply with that section *unless existing law ... expressly prohibits or makes compliance impossible.*" 40 C.F.R. § 1500.6 (emphasis added). The legislative history confirms this

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[5] At most, NEPA supports a narrowly drawn regulation to address situations in which a *bona fide* emergency renders the preparation and submission of environmental compliance documentation not "possible" within the meaning of the statute. 42 U.S.C. § 4332. This was CEQ's original intent in promulgating the regulation. *See* App. 46a-47a, 116a-118a.

interpretation. 115 Cong. Rec. (Part 29) 39702-39703 (1969); *see also Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1114-15 (D.C. Cir. 1971) (discussing legislative history).

Here there is no other statute preventing the Navy from complying with NEPA, and no obstacle rendering compliance "impossible." Although the Navy contends that NEPA must give way to its statutory obligation to be "organized, trained, and equipped" (10 U.S.C. § 5062), the court of appeals affirmed the district court's factual determination that the additional mitigation measures would *not* prevent the Navy from training effectively and certifying its troops. App. 79a. Moreover, the Navy is currently preparing an EIS for the SOCAL range, which demonstrates that it can both comply with NEPA and fulfill its other statutory obligations. App. 60a, 115a n.11. Because neither the mitigation order nor NEPA itself prevents the Navy from fulfilling its statutory mandate, there is no "existing law" or legal barrier of any kind that precludes the Navy from complying with NEPA. App. 52a-53a, 79a.

Courts have uniformly held that NEPA "does not provide an escape hatch for footdragging agencies" and "does not make NEPA's procedural requirements somehow 'discretionary.'" *Calvert Cliffs'*, 449 F.2d at 1114. If the governing statute "does not provide an escape hatch for footdragging agencies," certainly the implementing regulations cannot create that hatch. If Petitioners' view were the law, the military could simply forego NEPA compliance, await the inevitable court order, and then claim that environmental compliance is excused by the court's decision to

enforce the law. The court of appeals properly rejected the Navy's attempt to interpret CEQ's regulation in a manner that would, in effect, create a significant loophole in NEPA contrary to NEPA's language and all evidence of Congressional intent. App. 51a-52a.

3. The court of appeals also concluded that CEQ's attempt to apply its "emergency" regulation to effectively overturn a court-ordered injunction was contrary to the plain meaning and purpose of the regulation itself and thus invalid. App. 43a-48a. The Ninth Circuit's interpretation of the regulation was based on its examination of the numerous factors that courts routinely consider when interpreting regulations: "plain meaning," regulatory purpose, CEQ's guidelines interpreting the regulation, drafting history of the regulation, caselaw interpreting the regulation, CEQ's historical applications of the regulation, and the place of the regulation in implementing NEPA's statutory scheme. App. 41a-56a; *see also Rucker v. Wasbash R.R. Co.*, 418 F.2d 146, 149 (7th Cir. 1969); *cf. Gen. Dynamics Land Sys., Inc. v. Cline*, 540 U.S. 581, 599-600 (2004).

Petitioners assert that the courts below erred in failing to accord deference under *Auer v. Robbins*, 519 U.S. 452 (1997), to the interpretation of the regulation advanced in Petitioners' briefs. While the court of appeals recognized that agency interpretations of their own regulations are ordinarily accorded "substantial deference," it concluded that no deference was due to Petitioners' interpretation here under at least four of this Court's articulated exceptions to this principle. App. 41a-

56a. *First*, as discussed above, Petitioners' interpretation conflicts with the plain language and manifest purposes and policies of the governing statute. *Pub. Employees Ret. Sys. of Ohio v. Betts*, 492 U.S. 158, 171 (1989); *Morton v. Ruiz*, 415 U.S. 199, 237 (1974). *Second*, Petitioners' interpretation is contrary to the regulation's plain language and indicia of agency intent at the time of promulgation. *Thomas Jefferson Univ. v. Shalala*, 512 U.S. 504, 512 (1994). *Third*, the language of the regulation is not "ambiguous," and its clear language does not support Petitioners' interpretation. *Christensen v. Harris County*, 529 U.S. 576, 588 (2000). *Fourth*, Petitioners' interpretation is inconsistent with prior interpretations. *INS* v. *Cardoza-Fonseca*, 480 U.S. 421, 446 n.30 (1987).

In response, Petitioners claim that a single dictionary definition submitted by the Navy (which, unlike all the other definitions, defines "emergency" as "a situation demanding immediate attention") "should have been dispositive under *Auer*." Pet. 19.

This argument takes Petitioners nowhere. As an initial matter, even if Petitioners were correct that the court of appeals ought to have credited the Navy's preferred definition over the many others that define "emergency" to mean an "unexpected" or "unforeseen" occurrence (*see* App 45a n. 41, 112a-113a), it would not change the outcome here because the court of appeals affirmed the district court's factual finding that the situation was *not* one "demanding 'unusual or immediate action.'" App. 46a. Thus no emergency exists even under the Navy's preferred definition. Petitioners' claim that the emergency consists of a "court order demanding an EIS before vital military

exercises can proceed" (Pet. 19), simply ignores the fact that two federal courts have found, as a factual matter, that the order at issue does *not* prevent the Navy from successfully proceeding with its exercises.

Furthermore, even if the definition supported Petitioners' position, the citation of a single favorable definition does not require a court to ignore all other dictionary definitions and evidence of the term's meaning as used in the regulation. To the contrary, courts must determine the plain meaning of a word in light of the numerous factors that bear on its interpretation, and need not defer to outlying dictionary definitions that are contrary to plain meaning and ordinary usage. *See MCI Telecomm. Corp. v. Am. Tel. & Telegraph Co.*, 512 U.S. 218, 225-27 (1994). The court was well within its discretion in rejecting Petitioners' definition.

Petitioners also complain that the court of appeals erred in declining to "adjudicate" a definition of "emergency." Pet. 19. But this Court has made clear that a reviewing court should adjudicate definitional disputes only insofar as "necessary" to decide the matters before it, particularly in the posture of a preliminary injunction. *Ashcroft*, 542 U.S. at 665. The appellate court properly avoided proffering its own definition of the term because doing so was not necessary to its determination that CEQ's application of its regulation was outside the bounds of the ordinary meaning of the term. *See* App. 44a-45a & n. 41, 112a-115a.

Moreover, the definition of "emergency" to which Petitioners demand adherence was not proffered by CEQ, but by Petitioners. *Auer* applies only to an agency's own interpretation of its regulations. *Auer*,

519 U.S. at 462 (agency interpretation must reflect the agency's "fair and considered judgment on the matter in question"). But CEQ's letter to the Navy sets forth no formal, or even informal, definition of "emergency." The Navy is not charged with administering NEPA, and Petitioners' lawyers' post-hoc rationalizations of CEQ's analysis are not entitled to deference. *Inv. Co. Inst. v. Camp*, 401 U.S. 617, 628 (1971); *Bowen*, 488 U.S. at 212; *U.S. Air Tour Ass'n v. F.A.A.*, 298 F.3d 997, 1015-16 (D.C. Cir. 2002).[6] The Navy's preferred definition of the term need not even be deferred to, much less considered dispositive. *Id.*; *see also Wood v. Mukasey*, 516 F.3d 564, 568 (7th Cir. 2008); *City of Kansas City, Mo. v. Dep't of Housing and Urban Dev.*, 923 F.2d 188, 192 (D.C. Cir. 1991).

Auer deference was also inappropriate because both of the courts below correctly found that CEQ's application of its regulation to effectively overturn an Article III court order would raise "serious" constitutional issues under Separation of Powers doctrine. App. 55a n.47, (citing *Plaut v. Spendthrift Farm, Inc.*, 514 U.S. 211 (1995); *Hayburn's Case*, 2 U.S. (2 Dall.) 409 (1792)); App. 122a-124a. The courts below properly avoided these serious constitutional issues, applying constitutional avoidance doctrine. *Id.* Notwithstanding *Auer* or any otherwise-applicable deference principles, courts must interpret statutes and regulations to avoid serious constitutional issues unless Congress itself has expressly called for the constitutionally suspect

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[6] The listing of CEQ's counsel on the certiorari petition does not alter this fact. *Adair v. United States*, 497 F.3d 1244, 1252 (Fed. Cir. 2007).

interpretation. *Edward J. DeBartolo Corp. v. Fla. Gulf Coast Bldg. & Constr. Trades Council*, 485 U.S. 568, 574-75 (1988). Congress has not done so here. The court of appeals thus properly refused *Auer* deference and rejected Petitioners' broad interpretation to avoid the serious likelihood that the regulation will be held unconstitutional. *United States v. Delaware & Hudson Co.*, 213 U.S. 366, 407-08 (1909).

Not only was CEQ's disregard of the district court's findings constitutionally suspect, it was also improper for CEQ to venture to overrule the district court's factual conclusions about the feasibility and minimal burden of its injunctive measures – a matter over which CEQ clearly had no particular expertise. *Hoffman Plastic Compounds, Inc. v. NLRB*, 535 U.S. 137, 143-44 (2002) (holding that an agency's interpretation in a matter "so far removed from its expertise merited no deference from this Court").

Petitioners further assert that, even apart from *Auer* deference, the court of appeals' interpretation was contrary to interpretations of the regulation offered by other courts and that its determination creates a circuit-split with the D.C. Circuit's decision in *Nat'l Audubon Soc'y v. Hester*, 801 F.2d 405 (D.C. Cir. 1986). Pet. 14. These claims are unfounded.

The facts and legal posture of *Hester* could not be more different from this case. In *Hester*, the Wildlife Service was forced to take immediate action in order to prevent the imminent disappearance of the California Condor, an endangered species. In upholding the agency's action – for reasons wholly independent of the alternative arrangements propounded by CEQ – the D.C. Circuit stated that

when considering the validity of agency actions under NEPA, "judicial review of agency decisionmaking is at its most deferential where, as here, the agency action is based *solely* upon environmental considerations." *Hester*, 801 F.2d at 407-08 (emphasis in original). The "alternative arrangements" were merely cited in a footnote as a possible alternative basis for upholding the agency's action. Petitioners' purported "conflict" between the instant case and *Hester* arises not from *Hester's* holding, but from Petitioners' strained interpretation of dicta stated in a footnote. *Id.* at 408 n.3. Petitioners, divorcing this footnote from the context of the rest of the opinion, attempt to create a conflict where none exists. In any event, a circuit split cannot be created by conflicting dicta. *See Layne & Bowler Corp. v. Western Well Works, Inc.*, 261 U.S. 387, 393 (1923).

The court of appeals and district court carefully reviewed *Hester* along with the other cases decided under Section 1506.11 and, in every instance, found the cases fully consistent with their conclusions. App. 48a-50a; 113a-115a. Indeed, no court has ever found a bona fide "emergency" arising from an order of an Article III court. Nor is there any caselaw – or, indeed, any previous application of the regulation – finding an "emergency" when an agency, which had more than sufficient time to comply with the statute, failed to prepare required environmental analysis for long-planned activities.

Petitioners' cases finding emergencies in "foreseeable" circumstances (Pet. 18) are off-point, both because none involves the specific regulatory provision at issue here and because the Ninth

Circuit's determination was based on considerations far beyond the predictability of any particular event. The "foreseeable" air traffic controllers strike in *Letenyei v. Dep't of Transp.*, 735 F.2d 528 (Fed. Cir. 1984), for instance, was not a self-created emergency, not precipitated by a court order, and not caused by an agency's failure to comply with the law for its long-planned activities.

Moreover, even if Petitioners' interpretation of the regulation were accepted, CEQ's "alternative arrangements" would still be arbitrary and capricious, because they were not limited to "actions necessary to control the immediate impacts of the emergency," as the regulation requires. First, while the Navy has alleged harm stemming from only two of the court's measures, CEQ's alternative arrangements jettisoned *all* of the district court's prescribed mitigation. Second, CEQ purported to excuse the Navy from compliance with NEPA prospectively through January 2009, even though a full year is not "necessary" to control any "immediate" impacts. 40 C.F.R. § 1506.11. And, as the court of appeals noted, the Navy's five-month delay in seeking alternative arrangements after the district court's injunction belied its asserted need for any "emergency" measures. App. 45a-46a.

Finally, Petitioners assert that the court of appeals erred in applying an "abuse of discretion" standard in assessing the district court's legal conclusions, rather than de novo review, and assert a circuit-split based thereon. Pet. 20. This argument is a red herring. The "abuse of discretion" standard, as consistently interpreted and applied by the Ninth Circuit and all other circuits, calls for *de novo* review

of legal conclusions and *clear error* review of factual conclusions. *Int'l Brotherhood of Teamsters v. N. Am. Airlines*, 518 F.3d 1052, 1055 (9th Cir. 2008) ("We review a district court's grant or denial of a preliminary injunction for an abuse of discretion. We review the district court's findings of fact for clear error, and its conclusions of law de novo.") (citations omitted); *accord Cooter & Gell v. Hartmarx Corp.*, 496 U.S. 384, 405 (1990). There was no error in the court of appeals' application of these settled standards here. *See, e.g.*, App. 48a.

IV. CONCLUSION

The petition for a writ of certiorari should be denied.

Respectfully submitted,

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May 2008

REPLY BRIEF

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File Date:
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No. 07-1239

In the Supreme Court of the United States

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., PETITIONERS

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.

ON PETITION FOR A WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

REPLY BRIEF FOR PETITIONERS

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The Ninth Circuit has affirmed a preliminary injunction that jeopardizes the Navy's ability to conduct critical training for strike-group personnel deploying overseas during ongoing hostilities. The President determined that the injunction unacceptably undermines naval training exercises in the Southern California Operating Area (SOCAL) that are in the "paramount interest of the United States" and "necessary to ensure * * * combat effectiveness" in operations "essential to national security." App. 232a. The Navy has conducted mid-frequency active (MFA) sonar training in SOCAL for over 40 years, and the Ninth Circuit acknowledged that "the record contains no evidence that marine mammals have been harmed" by such training. App. 76a. As explained in the petition, the Ninth Circuit fundamen-

tally erred in concluding that a preliminary injunction was proper in those circumstances.

The Ninth Circuit's decision conflicts with the judgment of Congress, the President, the Nation's top naval officers, the relevant agencies charged with protecting marine mammals (the National Marine Fisheries Service) and for interpreting the National Environmental Policy Act (NEPA) (the Council on Environmental Quality (CEQ)). It also conflicts with decisions of this Court and other courts of appeals. Respondents' submission that this Court should nevertheless deny review is unavailing.

A. CEQ Permissibly Construed Its Own Regulation In Determining That "Emergency" Circumstances Are Present

CEQ's determination that the need to carry out essential military training presents "emergency" circumstances under 40 C.F.R. 1506.11 is manifestly reasonable and therefore subject to controlling weight. Pet. 16-22. Yet, rather than accord such deference, the Ninth Circuit deferred to the *district court's* contrary reading—and did so under an abuse-of-discretion standard, thereby abdicating its own responsibility to review that legal issue de novo. That approach is plainly erroneous and conflicts with the decisions of this Court and other circuits. *Ibid.*

1. Respondents, like the district court, assert (at 30-31) that the "plain meaning" of "emergency" is limited to "an 'unexpected' or 'unforeseen' occurrence," but they provide no meaningful response to the numerous dictionaries and appellate decisions demonstrating that the term encompasses circumstances that demand urgent action, even if they may have been foreseen. Pet. 18-19

& n.2; cf. *MCI Telecomms. Corp.* v. *AT&T*, 512 U.S. 218, 227 (1994) ("accepted alternative meaning[]" is reflected in multiple dictionaries). Respondents object (at 34-35) that those authorities do not address the "specific regulatory provision at issue," but that obviously misses the point: Those sources speak to the *plain meaning* of "emergency" and demonstrate that the district court's interpretation, sustained by the Ninth Circuit (44a-46a), is inconsistent with the understanding of "emergency" in other courts of appeals.

As those dictionary definitions and appellate decisions attest, a predicable "emergency" is not an oxymoron. For instance, if a cardiac patient fails to take his medicine, the resulting medical crisis is no less an emergency requiring immediate attention simply because it was foreseeable or the patient may have contributed to its cause. Simply put, an "emergency" exists if an immediate response is needed to avert a significant impending harm. "An assessment of blame regarding [the cause of] the predicament" is "irrelevant to a determination of whether [the government] is faced with an 'emergency situation.' " *Yonkers Racing Corp.* v. *City of Yonkers*, 858 F.2d 855, 866 (2d Cir. 1988) (finding emergency caused by city's "own intransigence"), cert. denied, 489 U.S. 1077 (1989).[1]

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[1] Respondents incorrectly assert (at 1) that the Navy has been intransigent regarding the need to prepare an EIS for the SOCAL exercises at issue here after a temporary restraining order (not preliminary injunction) was entered in earlier litigation concerning a 2006 naval exercise in Hawaii. NRDC brought suit nine days before the sonar component of that single exercise was to commence; a TRO entered after five days; the government appealed; and NRDC promptly settled the case, agreeing that the Navy did not concede the merits of any claims or that MFA sonar adversely affected marine mammals. Dist. Ct. Docket Entry No. 64, Ex. 3 para. 2.

2. Respondents defend (at 31, 35-36) the Ninth Circuit's decision not to "adjudicate" the definition of "emergency" by asserting that court applied the same de novo review of legal issues "applied * * * by all other circuits." The Ninth Circuit's approach, however, bears no resemblance to the de novo standard in other circuits. Rather than provide "substantial deference" to *CEQ's* interpretation of Section 1506.11, the court deferred to the *district court's* view. The court reasoned that, whether or not the district court was correct, it invoked the right general "legal principles" and did not make improper discretionary judgments. See App. 42a, 45a n.41; Pet. 19-20. That approach squarely conflicts with that of other courts of appeals, which properly determine afresh whether an agency's interpretations are entitled to deference. See, *e.g.*, *Hoult* v. *Hoult*, 373 F.3d 47, 53-55 (1st Cir.) (applying de novo review of "pure issues of law," including statutory construction under *Chevron*), cert. denied, 543 U.S. 1002 (2004); *Serono Labs., Inc.* v. *Shalala*, 158 F.3d 1313, 1318-1322 (D.C. Cir. 1998) (reversing preliminary injunction based on de novo review of "statutory and regulatory interpretation" that failed to defer to agency under *Chevron*).

Ashcroft v. *ACLU*, 542 U.S. 656 (2004) (see Pet. 31), is not to the contrary. There, the Court affirmed a preliminary injunction against enforcement of the Child Online Protection Act without construing several statutory terms because the district court itself rested its injunction on a preliminary *factual* determination that did not implicate those terms. *Id.* at 660, 665-669. Here, the district court's injunction was based on a pure issue of law.

3. Rather than defend the Ninth Circuit's judgment on its own terms, respondents retreat to arguments that

the Ninth Circuit did not address or disavowed as a basis for its decision.

a. Respondents argue (at 26-29) that CEQ's interpretation of its regulation was "*ultra vires*" and contrary to NEPA. But, while the Ninth Circuit noted that the district court applied the relevant "legal rules" in concluding that NEPA would prohibit CEQ's alternative arrangements "in the absence of a legitimate 'emergency,'" App. 50a, 54a, the court did "not reach" the government's argument that CEQ's application of Section 1506.11 actually "comports with NEPA." App. 54a n.46; cf. Gov't C.A. Br. 34-40. The court found reaching that issue unnecessary because it concluded that the "district court did not abuse its discretion in determining that no *emergency* existed" under Section 1506.11 and that therefore CEQ lacked "authority to issue its order." App. 54a n.46 (emphasis added).

In any event, CEQ's "emergency" regulation is fully consistent with NEPA, which, like the Constitution, is not a suicide pact. Consistent with the "rule of reason" "inherent in NEPA and its implementing regulations," *Department of Transp.* v. *Public Citizen*, 541 U.S. 752, 767 (2004), NEPA directs federal agencies to prepare a detailed statement of environmental impacts "to the fullest extent possible," but "consistent with other essential considerations of national policy," 42 U.S.C. 4331(b), 4332(2)(C). The imperative to proceed with military training necessary for national defense before completion of an EIS is "possible" clearly is based on "essential considerations of national policy" and satisfies any conception of a "rule of reason."[2]

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[2] Neither court below adopted respondents' view (at 27-28) that CEQ may authorize alternative arrangements for NEPA compliance only

b. Respondents assert (at 31-32) that CEQ, for its part, did not actually construe its own regulation. CEQ clearly concluded, however, that the "urgent national security" restrictions imposed by the district court's injunction, and the Navy's inability to complete an EIS before essential exercises must proceed, constitute "emergency circumstances" under Section 1506.11, App. 239a-240a, as the Ninth Circuit recognized. *E.g.*, App. 41a-44a (repeatedly discussing "CEQ's interpretation").

c. The canon of constitutional avoidance (Br. in Opp. 32-33) was not invoked by the courts below, App. 56a n.47, and does not apply here. Even if the canon applied to an agency's interpretation of its *own* regulation—as opposed to questions of "congressional intent," *Clark* v. *Martinez*, 543 U.S. 371, 381-382 (2005)—the word "emergency" in Section 1506.11 does not itself create constitutional doubt. And it is well-settled that no constitutional question arises where the ongoing vitality of prospective equitable relief is altered by changes in the underlying law, as occurred here when the Navy and CEQ invoked the "emergency circumstances" regulation. *Miller* v. *French*, 530 U.S. 327, 344-346 (2000); *Robertson* v. *Seattle Audubon Soc'y*, 503 U.S. 429, 437-441 (1992); cf. *Weinberger* v. *Romero-Barcelo*, 456 U.S.

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where a different statute creates an "irreconcilable and fundamental conflict" making it "impossible" to complete the normal EIS process. The district court recognized that "unforeseen events * * * implicating national security" could properly qualify as "emergenc[ies]" justifying alternative arrangements and illustrated that rule by citing cases that did *not* involve an irreconcilable and fundamental conflict between NEPA and another statutory mandate. App. 113a-115a, 120a n.15. That decision, like that of the court of appeals, reflects the fact that respondents elected *not* to argue below that Section 1506.11 violates NEPA or that "NEPA disallows exceptions for emergencies." App. 42a, 111a; see Pet. 16-17.

305, 319 (1982) (noting that executive action may authorize conduct previously declared unlawful).

d. Respondents assert (at 24-26) that the Ninth Circuit "correctly questioned" whether CEQ relied upon an adequate agency record in evaluating the injunction's impact on essential strike-group training. The court, however, was careful only to "note" its view that respondents raised "serious question[s]" in this regard, App. 54a-55a, perhaps because respondents' brief did not contend that the administrative record rendered CEQ's determination arbitrary and capricious, Resp. C.A. Br. 31, and the district court did not address the issue. The district court's interpretive ruling turned only upon the meaning of "emergency" in Section 1506.11, not the impact that its injunction would have on Navy training. App. 108a-124a.

B. The Preliminary Injunction Is Fundamentally Inconsistent With Established Equitable Principles

Even if the district court were correct that the Navy's and CEQ's emergency actions were invalid, preliminary injunctive relief was still inappropriate. Such relief disregards the equitable balance that Congress itself has struck between military readiness and marine mammal protection, is improperly based on the mere "possibility" of harm, and wholly fails to address the relative magnitude of harms where the national security and safety of the men and women of the armed forces are at stake. Pet. 22-32.

1. Respondents contend (at 10-12) that while Congress has authorized the Secretary of Defense to exempt the very military readiness activities at issue here from the MMPA's substantive protections for marine mammals, "Congress has granted no similar exemption from

NEPA requirements." That argument is correct as far as it goes. That issue, however, is distinct from whether a court, after finding a NEPA violation, may enjoin those essential military readiness activities based on its own assessment of military needs and appropriate substantive protections for marine mammals. As we have explained (Pet. 22-25), the courts' equitable power is constrained by Congress's "order[ing] of priorities in [this] given area." *United States* v. *Oakland Cannabis Buyers' Coop.*, 532 U.S. 483, 497 (2001).

Respondents do not dispute that, by exempting military readiness activities from the MMPA's prohibitions when the Secretary of Defense finds it "necessary for national defense," 16 U.S.C. 1371(f) (Supp. V 2005), the governing statute reflects Congress's judgment about how to "properly balance[] the equities associated with military readiness and marine species protection." H.R. Conf. Rep. No. 354, 108th Cong., 1st Sess. 669 (2003). Accordingly, when a court must determine whether and to what extent an injunction is appropriate, and the competing equities before it involve potential harm to marine mammals from training covered by Section 1371(f), the court lacks discretion to reject the equitable "balance that Congress has struck." *Oakland Cannabis*, 532 U.S. at 497.

Respondents likewise misapprehend (at 12-14) the significance of the assumption (Pet. 24-25) that a court might appropriately order completion of an EIS. While other cases might warrant broader relief, the district court here lacked discretion to enjoin essential training based on its assessment of potential harm to marine mammals, so the most it could do was to order completion of an EIS. See *Romero-Barcelo*, 456 U.S. at 314-319 (affirming injunction allowing ongoing bombing ex-

ercises while requiring that Navy seek Clean Water Act permit).

2. Respondents contend (at 14-15) that while the Ninth Circuit ruled that the "mere possibility" of irreparable harm can warrant an injunction (App. 36a, 76a-77a), that ruling is "irrelevant" because the court affirmed a finding of a "near certainty" of harm. But the notion that "irreparable harm to *marine mammals* will almost certainly result," App. 87a (emphasis added), cannot be squared with the court of appeals' acknowledgment that the record contains "no evidence" that marine mammals have been harmed during the 40 years of MFA sonar training in SOCAL. Nor does it satisfy respondents' burden of establishing irreparable harm *to their members*. Pet. 27. Accordingly, to tie the supposed environmental effects to aesthetic injury derivatively claimed by respondents, the Ninth Circuit rested its judgment on finding a "*possibility* of irreparable injury at the species or stock-level." App. 77a (emphasis added); see Pet. 27-28. Given the 40-year history of MFA sonar training in SOCAL and the absence of *any evidence* of resulting harm, App. 76a, the mere "possibility" of harm is the most the court could have found. See Pet. 6-8, 28-29 & n.3. The court's heavy (and misplaced) reliance on the Navy's own Environmental Assessment (EA) reinforces that conclusion: The EA, which itself is entitled to substantial deference under the arbitrary-and-capricious standard of review, predicts only eight injuries to common dolphins, which the Navy would likely avoid with its mitigation measures, and does not pre-

dict *any* injuries for other species, including beaked whales. Pet. 6-7, 28 n.3.[3]

Respondents err in dismissing (at 16-18) the division of authority over whether a mere "possibility" of irreparable harm is sufficient as mere "linguistic" differences. The D.C. Circuit, for instance, holds that a movant must show "that irreparable injury is 'likely' to occur," *Wisconsin Gas Co.* v. *FERC*, 758 F.2d 669, 674 (1985) (per curiam), and has "emphasized the stringency of th[is] requirement," *Reynolds Metals Co.* v. *FERC*, 777 F.2d 760, 763 (1985) (Scalia, J., joined by R.B. Ginsburg, J.), as a "high standard for irreparable injury." *Chaplaincy of Full Gospel Churches* v. *England*, 454 F.3d 290, 297 (2006). Other courts have likewise concluded that the "mere possibility" of irreparable harm is insufficient. Pet. 26-27. The Ninth Circuit, by contrast, holds that its " 'mere possibility of irreparable harm' standard" is satisfied without any "significant threat" of harm. App. 76a-77a.

3. Respondents make no attempt to portray the possible environmental harm to individual marine mammals as comparable to harm to the national security or to the thousands of Sailors and Marines whose safety overseas depends on the skilled deployment of MFA sonar. Instead, respondents contend (at 18-22) that the preliminary injunction will not hinder the Navy's ability to "successfully train" its strike groups for deployment.

In defending the injunction's 2200-yard MFA sonar "shut-down" zone (App. 139a), for instance, respondents incorrectly assert (at 19) that the Navy has repeatedly utilized similar "safety zones." Although the Navy has

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[3] Indeed, while respondents claim that beaked whales would most likely be injured by MFA sonar, respondents have never contended that any of their members have seen or will attempt to see beaked whales.

required reduced power in (smaller) safety zones, it has never required that MFA sonar *shut down* at that range. App. 85a n.68, 225a-226a. The Ninth Circuit (and now respondents) instead rely on the fact that the Navy has used a 2200-yard shut-down zone for a specific *low*-frequency active (LFA) sonar system as justifying that restriction for MFA sonar. App. 85a. But LFA sonar is utilized for the *long*-range detection of submarines (including at ranges exceeding 100 miles), *NRDC* v. *Evans*, 279 F. Supp. 2d 1129, 1161 (N.D. Cal. 2003); C.A. Supp. E.R. 220, and it is self-evident that the tactical impact of a 2200-yard (1.25-mile) shut-down zone for LFA sonar involves entirely different considerations from those pertinent here. C.A. E.R. 1135; App. 277-285. The Ninth Circuit's willingness to strike out on its own in this complicated military and scientific context underscores the degree to which it has failed to defer to the professional military judgment of the Nation's most senior naval officers.

The court similarly discounted, and respondents label as "speculation" (at 19-20), the professional assessment of the Chief of Naval Operations (App. 345a) and the Commander of the Pacific Fleet (App. 353a-356a) that a 2200-yard shutdown zone would greatly risk the success of critical exercises. Seizing upon instances where individual commanders have *voluntarily* shut down sonar beyond 200 yards when tactical circumstances permitted, App. 83a-84a, the court disregarded the Navy's explanation that such voluntary actions cannot justify a *mandatory* 2200-yard shutdown zone regardless of tactical considerations. App. 354a-356a.

Respondents also contend (at 20) that the injunction's restrictions in significant surface ducting do not harm training because in SOCAL (unlike other loca-

tions) such conditions do not frequently occur. Not only does the infrequent prevalence of significant surface ducting in SOCAL cut against any notion of irreparable harm requiring relief; but also, when surface ducting *does* occur during ongoing exercises, the Navy must be able to train effectively in such conditions, which submariners exploit to conceal themselves. Pet. 32; App. 299a-300a, 333a. The injunction's 75%-power-reduction requirement—even when no marine mammal is present—renders realistic training impossible. *Ibid.*

The Ninth Circuit itself was sufficiently concerned about these impacts of the injunction that it took the extraordinary course of staying them sua sponte pending this Court's disposition of this case. App. 93a-95a. Accordingly—and in light of the Ninth Circuit's serious legal errors and the conflicts they create with decisions of this Court and other courts of appeals—review by this court is warranted.

* * * * *

For the foregoing reasons and those stated in the petition, the petition for a writ of certiorari should be granted.

Respectfully submitted.

PAUL D. CLEMENT
Solicitor General

JUNE 2008

AMICUS CURIAE BRIEF

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IN THE

Supreme Court of the United States

DONALD C. WINTER, *et al.*,
Petitioners,

v.

NATURAL RESOURCES DEFENSE COUNCIL, *et al.*,
Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

BRIEF OF CALIFORNIA FORESTRY ASSOCIATION AS *AMICUS CURIAE* IN SUPPORT OF PETITIONERS

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INTERESTS OF *AMICUS CURIAE*[1]

Amicus California Forestry Association represents forest products companies in the geographical area encompassed by the Ninth Circuit. The second question presented in the Petition[2] – regarding the preliminary injunction standards articulated by the Ninth Circuit – is of vital concern to the California Forestry Association's members.

Timber sales on federal lands are frequent subjects of litigation within the Ninth Circuit. Environmental group plaintiffs often seek to preliminarily enjoin the timber harvesting. Ninth Circuit courts frequently grant such preliminary injunctions, relying on the easily-met standards articulated in a timber case (*Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147 (9th Cir. 2006)), and then applied by the Ninth Circuit here. *See* App. 37a, 76a (citing *Earth Island*).

Those preliminary injunctions interrupt the steady supply of timber needed for our members' businesses. They cause economic injuries to

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[1] Petitioners and Respondents have consented to the filing of this brief in letters on file in the clerk's office. All parties were notified of *Amicus*'s intent to file this brief more than 10 days before the due date. No counsel for a party authored this brief in whole or in part, and no person or entity, other than *Amicus*, its members, or its counsel made a monetary contribution intended to fund the preparation or submission of this brief.

[2] "2. Whether, in any event, the preliminary injunction, based on a preliminary finding that the Navy had not satisfied NEPA's procedural requirements, is inconsistent with established equitable principles limiting discretionary injunctive relief." Pet. at I.

businesses and local communities. Additionally, where federal forests are not timely thinned, this increases the risks of insect infestations coming onto private timberlands and the risks of catastrophic wildfires to timberlands and local communities.

The California Forestry Association supports the Petition and the position of the United States that Ninth Circuit case law sets the bar too low for what should be an extraordinary preliminary injunction. This brief supplements the Petition, and can assist the Court in deciding whether to grant the writ, in two ways.

First, the brief explains why this case has broad significance beyond the clearly important area of military preparedness. The preliminary injunction standards employed in the Ninth Circuit have pernicious effects on a wide array of agency actions and private economic activity, as illustrated with respect to recurring issues involving federal timber sales. Second, the brief provides additional documentation that the decision below is contrary to decisions of this Court and perpetuates conflicts in the circuit courts.

SUMMARY OF ARGUMENT

The national security and separation of powers implications of the Ninth Circuit's preliminary injunction against naval training exercises make *Winter v. Natural Resources Defense Council* a strong candidate for this Court's review. This case becomes an even more compelling candidate after consideration of two additional factors.

First, the decisions below contravene Supreme Court precedents and perpetuate mature conflicts in the circuits. Second, the Ninth Circuit's easily-met

standards for a preliminary injunction have broad significance. Those standards promote preliminarily enjoining a wide variety of important federal programs and productive private activities based on speculative risks of irreparable injury, and through distorted analyses where short-term preservation dominates. This case warrants review under Rule 10's considerations.

REASONS FOR GRANTING THE PETITION

1. In its *NRDC v. Winter* opinions, the Ninth Circuit declined to abide by national defense and emergency determinations made by the Executive and Legislative Branches. The Ninth Circuit restricted the use of sonar in naval training exercises in ways that the responsible Executive Branch officials believe are compromising our Nation's military preparedness. The Ninth Circuit did so through analyses that sonar's risk of injury to individual marine mammals should be controlling under a "mere possibility" of irreparable injury test,[3] the balance of harms among the parties test, and the public interest test. *See* App. 75a-77a, 87a-89a.

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[3] This low standard was crucial to the conclusion that NRDC had satisfied the irreparable injury prerequisite to a preliminary injunction. As the Ninth Circuit stated, "the record contains no evidence that marine mammals have been harmed by the use of MF sonar in the Southern California Operating Area" – scientists simply believe "sonar may cause injury" to some marine mammals in certain circumstances. App. 76a.

And the "injuries" often could be minor. Most of the hypothesized injuries from sonar to marine mammals consist of "Level B" temporary hearing problems and other non-permanent injuries. App. 17a, 19a-20a, 64a-65a, 75a-76a.

The Ninth Circuit erred in not honoring the balancing of public interests by the Legislative and Executive Branches. *See* Pet. at 22-25. While the Marine Mammal Protection Act ordinarily favors the interests of marine mammals, it allows the Secretary of Defense to exempt activities "necessary for national defense." 16 U.S.C. 1371(f). The exemption was invoked here. Because Congress and the Executive Branch have found that national defense interests trump the interests in avoiding small potential impacts to some marine mammals, the Ninth Circuit's contrary view falls under *United States v. Oakland Cannabis Buyers' Coop.*, 532 U.S. 483, 497 (2001), and other Supreme Court authority. *See* Pet. at 22-25.

The courts below also overrode a determination by the agency implementing the National Environmental Policy Act ("NEPA"), the Council on Environmental Quality ("CEQ"). The Navy had prepared an extensive environmental assessment on the training program, and is preparing the environmental impact statement ("EIS") demanded by the lower courts. CEQ determined that the training exercises could continue in the interim. CEQ approved alternative NEPA procedures because an "emergency" exists within the meaning of CEQ's NEPA rules. *See* Pet. at 16-22.

The Ninth Circuit, by refusing to defer to CEQ's permissible reading of its own rules, contravened *Auer v. Robbins*, 519 U.S. 452, 461 (1997). The reading of a NEPA "emergency" approved by the Ninth Circuit (App. at 50a-56a) also conflicts with

National Audubon Soc'y v. Hester, 801 F.2d 405, 408 (D.C. Cir. 1986).[4]

Accordingly, the decision below warrants review because it is inconsistent with Supreme Court precedents and sets up a circuit conflict. Perhaps more importantly, the Ninth Circuit's view that it can freely override judgments and interpretations by the political Branches has troubling separation-of-powers implications that augur in favor of accepting review.

2. The courts below found likely violations of NEPA. The likely violations were: (1) an EIS should be prepared on the naval training exercises to comply with NEPA, rather than the extensive environmental assessment prepared by the Navy Department; and (2) CEQ's determination was improper that an "emergency" exists allowing the training exercises to continue until the EIS is prepared. App. 37a-74a.

Thus, the Ninth Circuit granted an intrusive preliminary injunction limiting the Navy's training exercises, based on a likely procedural violation that was being cured through the Navy's preparation of an EIS. *See* Pet. at 17, 21, 25. Such a substantive injunction for a procedural violation that is being cured contravenes several of this Court's precedents.

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[4] The proper test for a NEPA "emergency" has significance for many federal programs. *See* App. at 48a-49a. This includes forestry matters such as salvage logging after a natural disaster, and forest thinning to reduce risks of catastrophic wildfires. *See* the "forest management" hearings cited in the Pet. at 17.

Most notably, in *Weinberger v. Romero-Barcelo*, 456 U.S. 305 (1982), this Court reversed a substantive injunction against the Navy's bombing exercises. The Court found the Navy's commitment to obtain a permit under the Clean Water Act was a sufficient (procedural) remedy to achieve statutory compliance. 456 U.S. at 312-18. The fact pattern in *Romero-Barcelo*, of course, is similar to the naval training program and NEPA violations asserted here.

More generally, this Court has preferred less-drastic relief that does not prevent the agency from operating. *United States v. James Daniel Good Real Property*, 510 U.S. 43, 63-64 (1993); *Brock v. Pierce County*, 476 U.S. 253, 260 (1986).

In *NRDC v. Winter* and in *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147 (9th Cir. 2006), the Ninth Circuit has applied NEPA in a preservationist manner – as presumptively supporting a substantive injunction for a curable procedural NEPA defect. *See* App. 56a-79a; *Earth Island*, 442 F.3d at 1177 ("the preservation of our environment, as required by NEPA . . . , is clearly in the public interest"). That approach is inconsistent with this Court's guidance that NEPA is procedural, and does not mandate adoption of the most preservation-oriented alternative. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349-53 (1989) (reversing a Ninth Circuit decision).

The Ninth Circuit's imposition of one reading of NEPA over CEQ's reading repeats another error found in *Robertson v. Methow Valley*. At 490 U.S. 354-56, the Court reversed the Ninth Circuit's reading that NEPA itself requires a "worst case"

analysis, and reversed the lower court's refusal to defer to a new CEQ rule.

Moreover, as *NRDC v. Winter* and *Earth Island* illustrate, the Ninth Circuit often applies preliminary injunction standards in a manner that effectively presumes environmental injuries are irreparable.[5] Yet, this Court reversed the Ninth Circuit's earlier presumption that environmental injury is irreparable in *Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 544-46 (1987).

In sum, the Ninth Circuit's NEPA-related rulings are seriously out of step with this Court's guidance. This case is an appropriate vehicle for this Court's exercise of its supervisory jurisdiction over lower courts.

3. Review should be granted because the decision below adopts standards for preliminary injunctions that are inconsistent with established equitable principles and with this Court's precedents. *See* Pet. at I (second question presented), 22-32. *Amicus* would emphasize that the Ninth Circuit's approach has pernicious effects that extend far beyond military preparedness.

As described below, the Ninth Circuit has adopted equitable tests for a preliminary injunction that are easily satisfied, such as the "mere possibility" of irreparable injury. This has the disruptive effect of promoting injunctions against a

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[5] That is, most of mankind's economic activities alter the environment in some way. If there is a "mere possibility" that this environmental alteration could cause irreparable injury, the irreparable injury test is arguably satisfied in the Ninth Circuit. App. 75a-77a.

wide array of federal agency actions and productive private economic activities before courts can fully consider the merits. The easily-met tests encourage plaintiffs who desire preliminary injunctions to forum shop and select courts within the Ninth Circuit.

Thus, the equitable tests the Ninth Circuit applied in *NRDC v. Winter* have broad significance to a wealth of cases in which preliminary injunctions are sought. This broad significance amplifies why the Court should review the Ninth Circuit's aberrant tests.

a. In the Ninth Circuit, a "mere possibility" (Pet. App. 74a-77a, 172a) of irreparable injury suffices to qualify for a preliminary injunction. The Solicitor General shows that a "mere possibility" standard cannot be reconciled with the extraordinary nature of preliminary injunctive relief, nor with several of this Court's precedents. Pet. at 26-30. *Amicus* supplements that showing with the following.

First, the Ninth Circuit's "mere possibility of irreparable injury" standard conflicts with additional Supreme Court authority beyond the three decisions highlighted in the Petition at 26. The "basis for injunctive relief in the federal courts has always been irreparable injury" – an injunction is an "extraordinary remedy" which does not issue for "trifling" injuries. *Romero-Barcelo*, 456 U.S. at 312. Yet, as applied within the Ninth Circuit, preliminary injunctions become a more "ordinary" occurrence.

The Ninth Circuit's "mere possibility" test is in tension with at least two other decisions by this Court. The Court recently overturned the lower

court practice of granting automatic injunctions for patent violations. *eBay v. MercExchange, L.L.C.*, 547 U.S. 388 (2006). That lower court practice is analogous to the Ninth Circuit's practice of issuing injunctions without proof of a substantial likelihood of irreparable injury. The *eBay* decision illustrates the strong gravitational pull in favor of traditional equitable standards.

In the permanent injunction context, the traditional standard is "plaintiff must demonstrate: (1) that it is has suffered an irreparable injury." *eBay*, 547 U.S. at 391. The "standard for a preliminary injunction is essentially the same as for a permanent injunction with the exception that the plaintiff must show a likelihood of success on the merits rather than actual success." *Amoco Prod.*, 480 U.S. at 546 n.12. Hence, the opinion below is contrary to the high likelihood of irreparable injury required in *eBay* and *Amoco Prod.*

Second, as the Petition (at 26-27) shows, the Ninth Circuit's "mere possibility" of irreparable injury test is in tension with the more stringent tests employed in the Second, Fourth, Eleventh, and Federal Circuits. *Amicus* would add that there are also apparent conflicts with decisions of the D.C., Third, Fifth, and Tenth Circuits.[6] The Ninth Circuit is the outlier, and that should be corrected.

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[6] *See Chaplaincy of Full Gospel Churches v. England*, 454 F.3d 290, 297-98 (D.C. Cir. 2006); *Schrier v. Univ. of Colo.*, 427 F.3d 1253, 1267-68 (10th Cir. 2005); *Adams v. Freedom Forge Corp.*, 204 F.3d 475, 484-85 (3d Cir. 2000); *Shanks v. City of Dallas*, 752 F.2d 1092, 1097 (5th Cir. 1985).

Third, determining the appropriate level of certainty of irreparable injury required to qualify for an extraordinary preliminary injunction is a recurring question of great significance to both the public sector and the private sector. Succinctly stated: a "mere possibility" test leads to preliminary injunctions in more cases.

Amicus's forestry sector of the economy provides a helpful illustration. The Ninth Circuit and district court cited the forestry decisions in *Earth Island* as establishing a "mere possibility" standard, and as concluding that district court errs if it applies a "significant threat of irreparable injury" test. App. 37a, 76a-77a, 163a, 217a (citing *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147 (9th Cir. 2006)).[7]

The Petition describes how the *NRDC v. Winter* preliminary injunction's disruption of training exercises seriously compromises the Defense Department's mission. Similarly, such injunctions can seriously compromise important Forest Service objectives. After a forest fire, the economic value of scorched trees deteriorates as logs rot and decay. The Forest Service has statutory authority from Congress to use revenues from the salvage sale of

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[7] There are actually two relevant *Earth Island* cases on preliminary injunctions. They concerned salvage sales of scorched timber after separate forest fires, where the revenues generated would help to pay for forest restoration. In both cases, the Ninth Circuit reversed the district court's denial of a preliminary injunction, finding that environmental groups satisfied the easily-met standard of the "mere possibility" of irreparable injury to a few birds and trees. *Earth Island*, 442 F.3d at 1153-55, 1158-59, 1177-78; *Earth Island Inst. v. U.S. Forest Serv.*, 351 F.3d 1291, 1298-99, 1308-09 (9th Cir. 2003).

timber to fund money-losing, but environmentally desirable, reforestation. In this time-sensitive situation, the grant of a preliminary injunction can mean the salvage harvesting and reforestation will not occur, because they become uneconomic at later points in time. *See Earth Island*, 442 F.3d at 1154-55, 1177; *Forest Serv. Employees for Envtl. Ethics v. U.S. Forest Serv.*, 408 F. Supp. 2d 916, 917-18 (N.D. Cal. 2006). Yet, because the Ninth Circuit's approach is heavily skewed towards short-term preservation, the economic and environmental harms in granting a preliminary injunction did not dissuade the Ninth Circuit in the *Earth Island* cases.

b. The Ninth Circuit found the "mere possibility of irreparable injury" test was satisfied due to the potential for sonar to injure individual marine mammals. App. 75a-77a. We provide below some further support for Federal Petitioners' position that any "finding of . . . irreparable injury must rest upon the existence of permanent *species-level* harm." Pet. at 27-28.

If there are minor risks to just a few individuals, but a viable population is retained over time, truly irreparable injury is avoided. By maintaining a viable species at the population level, the species continues to reproduce and thrive over time. Since the sad fact is that all individuals eventually die from some cause, the loss of a few individuals is not irreparable from the standpoint of population biology. Accordingly, the loss of a few individuals from viable, plentiful populations of marine mammals not listed under the Endangered Species

Act ("ESA")[8] should not be an irreparable injury. Rather, that loss is the type of "trifling" injury that does not warrant an extraordinary injunction. *Romero-Barcelo*, 456 U.S. at 311-12.

For such sound reasons, the majority of lower courts reaching the issue in non-ESA contexts have found there is no irreparable injury when an action poses risks to a few individuals, but not to the species.[9] To the extent the Ninth Circuit found that speculative injuries to a few individual marine mammals is an irreparable injury (*see* App. 77a), that is contrary to the majority view.

The Court should grant review and provide guidance to the lower courts on the recurring issue of alleged irreparable injury to wildlife.[10]

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[8] The panel did not address any ESA claim that sonar causes the unlawful "take" of a member of an endangered wildlife under ESA § 9 that can be enjoined in an ESA § 11 citizen suit. *See* 16 U.S.C. 1538(a)(1)(B) and 1540(g); *Babbitt v. Sweet Home Chapt. of Commtys. for a Great Oregon*, 515 U.S. 687 (1995).

[9] The Petition cites *Water Keeper Alliance v. U.S. Dept. of Defense*, 271 F.3d 21, 33-34 (1st Cir. 2001), and *Fund for Animals v. Frizzell*, 530 F.2d 982, 986-87 (D.C. Cir. 1975). *Amicus* would add *Natural Resources Defense Council v. Kempthorne*, No. 05-cv-1207 OWW TAG, 2007 WL 1989015 at *13 (E.D. Cal. July 3, 2007), and *Alabama v. U.S. Army Corps of Eng'rs*, 441 F. Supp.2d 1123, 1135-36 (N.D. Ala. 2006).

[10] Wildlife issues frequently arise in forest management contexts. Some lower courts have recognized that, because each species prefers particular habitats, choosing *any* form of active or passive forest management inevitably increases the population size of some species and decreases the population count for other species. *Sierra Club v. Espy*, 38 F.3d 792, 800-02 (5th Cir. 1994). *Accord Seattle Audubon Soc'y v. Moseley*, 80 (continued...)

c. This brings us to the "Ninth Circuit's distortion of equitable principles" with respect "to balancing the hardships of the parties and the public interest." Pet. at 29. We agree with the Solicitor General's judgment that "[a]bsent from [the Ninth Circuit's] analysis is any attempt to weigh the *magnitude* of potential harm to one party against the harm to another" and to the "public interest." Pet. at 30.

The bottom line is: the Ninth Circuit found sonar's risk of injury to individual marine mammals to be dispositive under the "mere possibility" of irreparable injury test, under the balance of harms among the parties test, *and* under the public interest test. *See* App. 75a-77a, 87a-89a. This repeats a pattern wherein the Ninth Circuit often grants preliminary injunctions by employing analyses heavily skewed towards short-term environmental preservation. *See Earth Island*, 442 F.3d at 1177 ("preservation of our environment . . . is clearly in the public interest"); *Earth Island*, 351 F.3d at 1308 ("the broader public interest in the preservation of the forest and its resources").

There are, however, other substantial public interests. One guidepost is that courts must consider the public interest as reflected in the statutes enacted by Congress. *Amoco Prod.*, 480 U.S. at 547 (the Ninth Circuit erred in not considering the public interest in oil and gas

---

(continued)
F.3d 1401, 1404 (9th Cir. 1996). Nonetheless, the Ninth Circuit sometimes finds that the risks forest management poses to some individual wildlife warrants a preliminary injunction. *E.g.*, *Earth Island*, 442 F.3d at 1170-77.

development reflected in the Outer Continental Shelf Lands Act).[11] Here, the Marine Mammal Protection Act reconciles the public interests in military preparedness and in protecting marine mammals by favoring the former. The Ninth Circuit erred in not honoring that priority of public interests. *See* Pet. at 23 and 29; page 4, above.

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[11] In *Amicus*'s forestry area of concern, Congress has directed that national forests be managed for multiple uses under principles of sustained yield.. 16 U.S.C. 528-31, 1604(e). This mandate encourages salvage logging (16 U.S.C. 1604(k) and 1611(b)), and contemplates that the sustained-yield harvesting of live trees will be carried out. 16 U.S.C. 475, 1604(e) and (g)(3)(F)(v), and (m), 1611. There are also legislatively-recognized public interests in thinning timber to reduce wildfire risks to local communities and to promote forest health. *See* 16 U.S.C. 551; the Healthy Forests Restoration Act in 16 U.S.C. 6511-91; *Healthy Forests – An Initiative for Wildfire Prevention and Stronger Communities* 4 (White House 2002) (http://www.whitehouse.gov/infocus/healthyforests/Healthy_Forests_v2.pdf). Thus, contrary to the Ninth Circuit's statement in *Earth Island*, 442 F.3d at 1177, the National Forest Management Act does not mandate "preservation of our environment." *Accord Sierra Club v. Espy*, 38 F.3d at 800.

Amicus mentions all this to illustrate that the preservationist tone in *NRDC v. Winter* recurs in other Ninth Circuit preliminary injunction opinions. The breadth of the problem supports granting review in this case. The Court's later opinion on the pertinent considerations for an extraordinary preliminary injunction will lead to more balanced rulings in courts within the extensive Ninth Circuit.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted,

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APRIL 25, 2008

JOINT APPENDIX

FOR ARGUMENT
109
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No. 07-1239
Supreme Court, U.S.
FILED
AUG 7 - 2008
OFFICE OF THE CLERK

In the Supreme Court of the United States

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., PETITIONERS

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.

REPRINTED COPY

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

JOINT APPENDIX (VOLUME 1)

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PETITION FOR A WRIT OF CERTIORARI FILED: MAR. 31, 2008
CERTIORARI GRANTED: JUNE 23, 2008

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UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

07-56157

NATURAL RESOURCES DEFENSE COUNCIL, INC.; THE INTERNATIONAL FUND FOR ANIMAL WELFARE; CETACEAN SOCIETY INTERNATIONAL; LEAGUE FOR COASTAL PROTECTION; OCEAN FUTURES SOCIETY; JEAN-MICHEL COUSTEAU, PLAINTIFFS - APPELLEES

v.

DONALD C. WINTER, SECRETARY OF THE NAVY; UNITED STATES DEPARTMENT OF THE NAVY; CARLOS M. GUTIERREZ, SECRETARY OF THE DEPARTMENT OF COMMERCE; NATIONAL MARINE FISHERIES SERVICES; WILLIAM HOGARTH, ASSISTANT ADMINISTRATOR FOR FISHERIES OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION; CONRAD C LAUTENBACHER, JR., ADMINISTRATOR OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION, DEFENDANT - APPELLANTS

DOCKET ENTRIES

DATE	DOCKET NUMBER	PROCEEDINGS
08/16/2007	1	DOCKETED CAUSE AND ENTERED APPEARANCES OF COUNSEL. CADS SENT (Y/N): N. Re-

DATE	DOCKET NUMBER	PROCEEDINGS
		ferred to MOATT pursuant to 9th Cir. R. 3-3. [07-56157]
08/16/2007	4	Filed "via e-mail" Appellants Donald C. Winter, et al. emergency motion for stay pending appeal; exhibits in 4 vols.; served on 8/15/07 [6261804] (to MOATT
		* * * * *
08/16/2007	6	Filed Appellant Donald C. Winter emergency motion to stay; served on 8/15/07 MOATT.
08/16/2007	7	Received notice of classified declaration filed under seal for ex parte and in camera review; served on 08/13/07. (MOATT)
		* * * * *
08/21/2007	10	Filed Amicus CCC's motion to intervene served on 8/21/07 wip/MOATT.
08/21/2007	11	Filed Amicus CCC response opposing emergency motion stay of lower court action served on 8/21/07 wip/ MOATT. [07-56157]

DATE	DOCKET NUMBER	PROCEEDINGS
08/21/2007	12	Filed Aples Natural Resources Defense Countil, et al's response opposing emergency motion stay of lower court action served on 8/21/07 wip/MOATT. (with 4 vol. of exhibits and exhibits 45 & 48 FILED UNDER SEAL MOATT. [07-56157]
08/22/2007	13	Received notice of filing of exhibit in support of Aple's oppotion to Federal Aplt's emergency for stay from Aples Naturual Resources Defense Council Inc. et. al. MOATT.
		* * * * *
08/23/2007	15	Filed Aplts' reply to response in supporting emergency motion stay of lower court action with exhibit21 ;served on 8/23/07 MOATT. [07-56157]
08/24/2007	16	Filed Aples' mtn to strike evidence submitted by Aptls in support of mtn for stay served on 8/23/07 MOATT.

DATE	DOCKET NUMBER	PROCEEDINGS
		* * * * *
08/24/2007	19	Filed Aplts' response opposing Aples' motion to strike portion served on 8/24/07 MOATT. [07-56157]
08/28/2007	20	Filed Appellee NRDC reply to response in supporting appellee's motion to strike; served on 8/27/07 MOATT. [07-56157]
08/31/2007	27	FILED ORDER FOR PUBLICATION AND NON DISPOSITIVE OPINION (Judges Andrew J. KLEINFELD, author, CONSUELO M. CALLAHAN, Milan D. SMITH, partial dissent and partial concurrence) . . . we order expedited briefing and calendaring of this appeal . . . A briefing schedule is set out in a separate order . . . The Navy's emergency mtn to stay the preliminary injunction entered by the district court on 8/7/07 is granted. (phoned/faxed csls by opinions clk) [07-56157]

DATE	DOCKET NUMBER	PROCEEDINGS
		* * * * *
09/14/2007	36	Filed original and 15 copies Appellant Donald C. Winter, Appellant U.S. Dept. of Navy, Appellant Carlos M. Gutierrez, Appellant NMFS, Appellant William Hogarth, Appellant Conrad C Lautenbacher opening brief (Informal: n) 61 pages and five excerpts of record in 5 volumes; served on 9/13/07 [07-56157]
		* * * * *
09/27/2007	41	Received Calif Coastal Commission's orig. 15 copies's brief of 27 pages; served on 9/26/07. Motion to intervene is pending. Copies to PANEL [07-56157]
09/28/2007	43	Filed original and 15 copies appellee NRDC, International Fund, Cetacean Society, League for Coastal, Ocean Futures Soc, Jean-Michel Cousteau's 60 pages brief,

DATE	DOCKET NUMBER	PROCEEDINGS
		4 vol. Exc.; served on 9/27/07 PANEL. [07-56157]
10/02/2007	44	Filed original and 15 copies Professor Hope Babcock et al's brief of 20 pages; served on 10/1/07 PANEL [07-56157]
		* * * * *
10/04/2007	47	Filed order (Deputy Clerk: hh) Treating the statement of interest of amici as a mtn to submit the amicus brief of the law professors in support of Plaintiffs-Appellees, the court grants the mtn and orders that the amicus brief be filed. [07-56157]
10/17/2007	48	Filed original and 15 copies Aplts' reply brief, (Informal: No) 30 pages; served on 10/15/07 PANEL. [07-56157]
10/22/2007	50	Received Amicus The Honolulu Council's brief in 15 copies of 15 pages; deficient: pending mtn to file am br with PANEL; served on 10/17/07 PANEL (with mtn). [07-56157]

DATE	DOCKET NUMBER	PROCEEDINGS
10/22/2007	51	Filed Amicus The Honolulu Council's motion to become amicus curiae served on 10/17/07 PANEL
	* * * * *	
10/25/2007	53	Filed order (Deputy Clerk: rr) The court grants the mtn of the California Coastal Commission to intervene and orders that its brief, lodged with the Clerk on 9/27/07 be filed. (Phoned csls) [07-56157]
10/25/2007	54	Filed original and 15 copies CCC's brief of 27 pages; served on 9/26/07 [07-56157]
10/30/2007	55	Filed order (Deputy Clerk: hh) The mtn of the Honolulu Council of the Navy League of the United States to file an amicus curiae brief in support of Defendants-Appellants' emergency motion for stay pending appeal is denied as moot. (phoned csls) [07-56157]
11/08/2007	56	ARGUED AND SUBMITTED TO Betty B. FLET-

DATE	DOCKET NUMBER	PROCEEDINGS
		CHER, Dorothy W. NELSON, Stephen R. REINHARDT [07-56157]
11/13/2007	63	Order filed FOR PUBLICATION (BETTY BINNS FLETCHER, DOROTHY W. NELSON and STEPHEN R. REINHARDT) . . . This panel shall retain jurisdiction over any further mtns, requests for relief or appeals in this matter. The stay is VACATED as of the time provided above and the matter is REMANDED for the district to enter a modified preliminary injunction containing appropriate mitigating conditions. [Remanded; Terminated on the merits after oral hearing; Written, without comment, unsigned, published;]
11/14/2007	59	Filed Aplts' additional citations, served on 11/13/07 PANEL. [07-56157]
11/19/2007	60	Filed Appellees' additional citations, served on 11/16/07 PANEL. [07-56157]

DATE	DOCKET NUMBER	PROCEEDINGS
06/12/2008	64	MANDATE ISSUED. (BBF, DWN and SR)

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

No. 08-55054

NATURAL RESOURCES DEFENSE COUNCIL, INC.; THE INTERNATIONAL FUND FOR ANIMAL WELFARE; CETACEAN SOCIETY INTERNATIONAL; LEAGUE FOR COASTAL PROTECTION; OCEAN FUTURES SOCIETY; JEAN-MICHEL COUSTEAU, PLAINTIFF

v.

DONALD C. WINTER, SECRETARY OF THE NAVY; UNITED STATES DEPARTMENT OF THE NAVY; CARLOS M. GUTIERREZ, SECRETARY OF THE DEPARTMENT OF COMMERCE; NATIONAL MARINE FISHERIES SERVICES; WILLIAM HOGARTH, ASSISTANT ADMINISTRATOR FOR FISHERIES OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION; CONRAD C LAUTENBACHER, JR., ADMINISTRATOR OF THE NATIONAL OCEANOGRAPHIC AND ATMOSPHERIC ADMINISTRATION, DEFENDANTS - APPELLANTS

DOCKET ENTRIES

DATE	DOCKET NUMBER	PROCEEDINGS
01/14/2008	1	DOCKETED CAUSE AND ENTERED APPEARANCES OF COUNSEL. CADS SENT (Y/N): y. Re-

DATE	DOCKET NUMBER	PROCEEDINGS
		ferred to MOATT pursuant to 9th CIR. R. 3-3. [08-55054]
01/16/2008	2	Filed fed def/aplts emerg mtn under CR 27-3 to vacate prelim inj or in the alternative, to partially stay pending appeal, w/declaration of Rear Admiral Ted N. Branch, Admiral Gary Roughead; served on 1/15/08 MOATT
		* * * * *
01/16/2008	4	Rcvd from fed aplts ntc of classified declarations of Ted N. Branch and Gary Roughead filed under seal for ex parte and in camera review. MOATT
01/16/2008	5	Rcvd from fed aplts ntc of redacted declarations of the classified declarations of Gary Roughead and Ted N. Branch. MOATT
01/16/2008	6	Received Appellants Donald C. Winter, et al. exhibit in support of aplts' emergency

DATE	DOCKET NUMBER	PROCEEDINGS
		motion for stay pending appeal; served on 1/16/08 (MOATT)
01/16/2008	8	Order filed: The Navy has filed an emergency motion in this court to vacate the preliminary injunction issued by the district court, or alternatively, to partially stay the injunction. To put the matter in context, we briefly set forth its procedural posture . . . (see order for full text). Accordingly, we REMAND to allow the district court in this first instance to determine the effect of these developments on its 1/3/08 preliminary injuction order, as modified on 1/10/08, and on its 1/14/08 stay order. This panel shall retain jurisdiction over any further motions, requests for relief, or appeals in this matter. We direct the parties simultaneously to furnish copies to this court of any papers or documents filed with the district court in this matter. REMAN-

DATE	DOCKET NUMBER	PROCEEDINGS
		DED. (Terminated on the Merits after Submission Without Oral Hearing; Remanded; Written, Unsigned, Unpublished. Betty B. FLETCHER, Dorothy W. NELSON, Stephen R. REINHARDT) [08-55054]
01/16/2008	10	Received aplts exhibits in support of aplts emerg mtn under CR 27-3 for stay pending appeal, Served on 1/15/08. MOATT
		* * * * *
01/25/2008	13	FOR PUBLICATION: Filed order (Betty B. FLETCHER, Dorothy W. NELSON, Stephen R. REINHARDT): The panel's 1/16/08 order remanding the district court is designated for publication. [08-55054]
02/08/2008	15	Filed order (Betty B. FLETCHER, Dorothy W. NELSON, Stephen R. REINHARDT): The ct expedites the appeal in order to determine expeditiously and with

DATE	DOCKET NUMBER	PROCEEDINGS
		* * * * *
		finality all outstanding issues in this proceeding. The aplts shall file their brief on or before 2/15/08, aples br is due 2/22/08. Argument is scheduled for 2:00pm in Pasadena, CA on 2/27/08. [08-55054]
02/15/2008	18	Filed Federal Defendants-Appellants' emergency motion under Circuit Rule 27-3 for partial stay pending appeal. [08-55054]; served on 2/15/08 [6431250]. (MOATT) (orig rcvd 2/19/08)
02/15/2008	19	Filed 1 e-mailed copy of Appellants' opening brief (Informal: no) 62 pages and 1 excerpt of record in 1 volume; served on 2/15/08. [08-55054] NOTE: original and 15 hard copies of brf and 5 copies of EOR received 2/19/08 (FEDEX TO PANEL)
02/19/2008	20	Filed order FOR PUBLICATION (Betty B. FLETCHER, Dorothy W. NELSON,

DATE	DOCKET NUMBER	PROCEEDINGS
		Stephen R. REINHARDT,): The Navy files an emergency motion for a partial stay of the preliminary injunction imposed by the district court's 1/3/08 order as amended by its 1/10/08 order. The motion follows the district court's 2/4/08 order denying the Navy's application to vacate or partially stay the preliminary injunction and lifting the temporary partial stay imposed by the dc on 1/17/08 . . . (see order for complete text) For the reasons stated above, the Navy's emergency motion for a partial stay of the preliminary injunction is DENIED without prejudice to renewal if this court's decision is delayed beyond 3/3/08. [6431250-1] [08-55054]
02/19/2008	21	Filed "electronically" intvr/ aple California Coastal Commission's response in opposition to emergency motion for stay [6431250-1]; served on

DATE	DOCKET NUMBER	PROCEEDINGS
		* * * * *
		2/19/08 (MOATT) [08-55054] (hard copy rcv'd 2/20/08)
02/22/2008	30	Received Allen M. Brabender for Appellants 08-55054 letter dated re: a copy of a letter to Mr. Gregory A. Fayer, Counsel for aples, date 2/21/08 and a copy of Mr. Fayer's letter dated 2/20/08. (FAXED PANEL) [08-55054]
02/22/2008	31	Filed pltf/aples motion file under seal answering brief and pgs 71-80,237-479, 480-717 and 738-811 of the SER, w/ declaration in support, served on 2/22/08 FEDEX TO PANEL
		* * * * *
02/22/2008	34	Received orig. 15 copies plft/ aples brief of 59 pages; served on 2/22/08 deficient: ovsz, mtn file file ovsz, to file brief, parts of EOR under seal, w/5 vols of SER

DATE	DOCKET NUMBER	PROCEEDINGS
02/22/2008	39	Filed original and 15 copies Intervenor/Appellee CA Coastal Comm.'s brief, 30 pages, served on 2/22/08 (E-filed on 2/21/08); minor defcy: missing Stmt of Rel. Cases. Notified counsel. Hard copies received by court 2/25/08 (FEDEX TO PANEL) [08-55054]
02/25/2008	36	Filed order (Betty B. FLETCHER, Dorothy W. NELSON, Stephen R. REINHARDT): Appellees' motion to exceed the type-volume limitation regarding the answering brief is granted. Appellants' motion for leave to file a reply brief is granted. The Clerk shall file the reply brief received on 2/25/08. Appellants' motion for leave to submit the classified declaration is granted. The briefing schedule established previously shall remain in effect. [08-55054]
02/25/2008	38	Filed original and 15 copies Appellants' reply brief, (In-

DATE	DOCKET NUMBER	PROCEEDINGS
		formal: No) 32 pages; served on 2/25/08 (faxed to court on 2/25/08). FEDEX TO PANEL [08-55054
02/26/2008	37	Filed per 2/25 order, original and 15 copies pltf-aples 59 pages brief, 5 Exc. vols:(mtn to file parts of SER under seal pending w/PANEL); served on 2/22/08 FEDEX TO PANEL [08-55054]
02/26/2008	40	Filed Appellant U.S. Dept. of Navy mtn for leave to submit classified declaration regarding timing for in camera and ex parte review. [08-55054] served on 2/25/08 (previously faxed to panel) [08-55054]
02/26/2008	41	Filed Appellant U.S. Dept. of Navy mtn for leave to file a reply brief. [08-55054] served on 2/25/08 (previously faxed to panel) [08-55054]
02/22/2008	42	ARGUED AND SUBMITTED TO Betty B. FLETCHER, Dorothy W. NELSON, Stephen R. REINHARDT [08-55054]

DATE	DOCKET NUMBER	PROCEEDINGS
02/29/2008	43	FILED OPINION (BETTY BINNS FLETCHER, DOROTHY W. NELSON and STEPHEN R. REINHARDT) AFFIRMED. [Affirmed;Terminated on the merits after oral hearing; Written, reasoned, signed, published; Judge: BBF Authoring, Judge: DWN On Panel But Did Not Write, Judge: SR On Panel But Did Not Write]. FILED AND ENTERED JUDGMENT.
02/29/2008	44	Filed order (BETTY BINNS FLETCHER, DOROTHY W. NELSON and STEPHEN R. REINHARDT) Order granting partial stay.
		* * * * *
04/22/2008	48	MANDATE ISSUED.(BBF, DWN and SR)

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

No. 8:07-cv-00335-FMC-FMO

NATURAL RESOURCES DEFENSE COUNCIL INC., ET AL

v.

DONALD C. WINTER, ET AL.

DOCKET ENTRIES

DATE	DOCKET NUMBER	PROCEEDINGS
03/22/2007	1	COMPLAINT against Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Filing fee $ 350); filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare. No summons issued. (ln,) (Entered: 03/29/2007)

DATE	DOCKET NUMBER	PROCEEDINGS
		* * * * *
03/22/2007	3	NOTICE of Related Case(s) filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare. Related Case(s): CV05-7513 FMC (FMOx) (ln,) (Entered: 03/29/2007)
		* * * * *
04/06/2007	4	ORDER RE TRANSFER PURSUANT TO GENERAL ORDER 224 -Related Case-filed. Related Case No: CV 05-7513 FMC (FMOx). Case transfered from Judge Cormac J. Carney and Arthur Nakazato to Judge Florence-Marie Cooper and Fernando M. Olguin for all further proceedings. The case number will now reflect the initials of the transferee Judge SA CV 07-0335 FMC (FMOx).

DATE	DOCKET NUMBER	PROCEEDINGS
		Signed by Judge Florence-Marie Cooper (smi,) (Entered: 04/06/2007)
04/06/2006		Cases associated with Lead Case LA CV 05-7513 FMC (FMOx) (smi,) (Entered: 04/06/2007)
		* * * * *
06/22/2007	14	NOTICE OF MOTION AND MOTION for Preliminary Injunction filed by plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare.Motion set for hearing on 7/23/2007 at 10:00 AM before Judge Florence-Marie Cooper. Lodged proposed order. (pcl) (Entered: 07/03/2007)
06/22/2007	15	PLAINTIFFS STANDING DECLARATIONS in Support of MOTION for Preliminary Injunction 14 [Declara-

DATE	DOCKET NUMBER	PROCEEDINGS
		tions of Jim Agronick; Ulrike Burgin; Jean-Michael Cousteau; Stephen Cummings; Catherine Dishion; Richard Hicks; Susan Jordan; Nancy Keltner; Gregg Lichtenstein; Nancy Marr; Kenneth McKenna; Helen Berkeley Meigs; Sabrina Napier; Melvin L. Nutter; Elizabeth Oreck; Melanie Powers; William Rossiter; Daniel Silver; Gina Trujillo] filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare. (pcl) (Entered: 07/03/2007)
06/22/2007	16	EXPERT DECLARATIONS in Support of MOTION for Preliminary Injunction 14 [Declarations of of David Bain; Robin William Baird; Thomas A Jefferson; Edward C.M. Parsons; Sentiel A Rommel; Linda Weilgart;

DATE	DOCKET NUMBER	PROCEEDINGS
		Hal Whitehead; George M Woodwell] filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare. (pcl) (Entered: 07/03/2007)
06/22/2007	17	MEMORANDUM of Points and Authorities in Support of MOTION for Preliminary Injunction 14 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare. (pcl) (Entered: 07/03/2007)
06/22/2007	18	DECLARATION of Cara Horowitz in Support of MOTION for Preliminary Injunction 14 filed by Plaintiffs Cetacean Society Interna-

DATE	DOCKET NUMBER	PROCEEDINGS
		* * * * *
		tional, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare. (pcl) (Entered: 07/03/2007)
06/22/2007	21	NOTICE OF MOTION AND MOTION to Dismiss or Stay filed by defendants Donald C Winter, United States Department of the Navy, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. Motion set for hearing on 7/23/2007 at 10:00 AM before Judge Florence-Marie Cooper. Lodged Order. (ad) (Entered: 07/10/2007)
06/22/2007	22	DECLARATION of Michael R Eitel in support of MOTION to Dismiss or Stay 21 filed by Defendants Donald C Winter, United States Department of the Navy, Na-

DATE	DOCKET NUMBER	PROCEEDINGS
		tional Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (ad) (Entered: 07/10/2007)
06/22/2007	23	MEMORANDUM OF POINTS AND AUTHORITIES in Support of MOTION to Dismiss or Stay 21 filed by Defendants Donald C Winter, United States Department of the Navy, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (ad) (Entered: 07/10/2007)
		* * * * *
07/09/2007	25	OPPOSITION to MOTION for Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)
07/09/2007	26	DECLARATION of Captain Martin N May in Support of

DATE	DOCKET NUMBER	PROCEEDINGS
		Opposition to MOTION for Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)
07/09/2007	27	DECLARATION of Conrad Erkelens in Support of Opposition to MOTION for Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)
07/09/2007	28	DECLARATION of Dorian S Houser in Support of Opposition to MOTION for Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos

DATE	DOCKET NUMBER	PROCEEDINGS
		M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)
07/09/2007	29	DECLARATION of Craig E Johnson in Support of Opposition to MOTION for Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)
07/09/2007	30	DECLARATION of Brandon L Southall in Support of Opposition to MOTION for Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)

DATE	DOCKET NUMBER	PROCEEDINGS
07/09/2007	31	DECLARATION of Harry D (Chip) Johnson in Support of Opposition to MOTION for Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)
07/09/2007	32	DECLARATION of Dr Arlene R Ketten in Support of Opposition to MOTION for Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)
07/09/2007	33	DECLARATION of Joan Cembrola in Support of Opposition to MOTION for Preliminary Injunction 14 filed by Defendants Donald C

DATE	DOCKET NUMBER	PROCEEDINGS
		Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)
07/09/2007	34	DECLARATION of Luther L Hajek in Support of Opposition to MOTION for Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (pcl) (Entered: 07/17/2007)
07/09/2007	35	MEMORANDUM of Points and Authorities in Opposition to MOTION to Dismiss 21 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International

DATE	DOCKET NUMBER	PROCEEDINGS
		Fund for Animal Welfare. (esa) (Entered: 07/19/2007)
07/09/2007	36	DECLARATION of Gregory A Fayer in opposition to MOTION to Dismiss 21 filed by Plaintiffs Cetacean Society International, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare. (esa) (Entered: 07/19/2007)
		* * * * *
07/09/2007	38	Unopposed EX PARTE APPLICATION to file the declaration of David G. Yoshihara under seal for EX PARTE and in camera review; filed by defendants; Lodged proposed Order(car) (Entered: 07/25/2007)
07/09/2007	39	MEMORANDUM of Points and Authorities in support of unopposed EX PARTE APPLICATION to file the Declaration of David G. Yoshihara under seal for EX PAR-

DATE	DOCKET NUMBER	PROCEEDINGS
		TE and in camera review; filed by defendants; EX PARTE APPLICATION 38 (ear) (Entered: 07/25/2007)
07/09/2007	40	DECLARATION of Michael R. Eitel in support of defendants' unopposed EX PARTE APPLICATION to file the declaration of David G. Yoshihara under seal for EX PARTE and in camera review; filed by defendants; EX PARTE APPLICATION 38 (ear) (Entered: 07/25/2007)
07/12/2007	24	ORDER GRANTING DEFENDANTS' UNOPPOSED EX PARTE APPLICATION TO FILE THE DECLARATION OF DAVID G. YOSHIHARA UNDER SEAL FOR EX PARTE AND IN CAMERA REVIEW by Judge Florence-Marie Cooper(ama) (Entered: 07/13/2007)
07/16/2007	41	UNOPPOSED EX PARTE APPLICATION for Leave to File Under Seal (1) Plain-

DATE	DOCKET NUMBER	PROCEEDINGS
		tiffs' Reply Memorandum in Support of Plaintiffs' Motion for Preliminary Injunction; (2) Declaration of Michael Jasny in Support of Plaintiffs' Motion for Preliminary Injuction; and (3) Exhibits Thereto filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare. Lodged Order and Under Seal.(csa) (Entered: 07/31/2007)
07/16/2007	42	DECLARATION of Gregory A. Fayer in Support of Plaintiffs' EX PARTE APPLICATION for Leave to File Under Seal (1) Plaintiffs' Reply Memorandum in Support of Plaintiffs' Motion for Preliminary Injunction; (2) Declaration of Michael Jasny in Support of Plaintiffs' Motion for Preliminary Injuction; and (3) Exhibits Thereto 41

DATE	DOCKET NUMBER	PROCEEDINGS
		filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, National Resources Defense Council Inc, International Fund for Animal Welfare. (csa) (Entered: 07/31/2007)
07/16/2007	43	REPLY IN SUPPORT of MOTION to Dismiss or Stay 21 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (csa) (Entered: 07/31/2007)
07/16/2007	44	SUPPLEMENTAL DECLARATION of Michael R. Eitel in Support of Defendants' MOTION to Dismiss or Stay 21 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries

DATE	DOCKET NUMBER	PROCEEDINGS
		Service, William Hogarth, Conrad C Lautenbacher, Jr. (csa) (Entered: 07/31/2007)
07/16/2007	45	REPLY MEMORANDUM in Support of Plaintiffs' MOTION for Preliminary Injunction 14 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, National Resources Defense Council Inc, International Fund for Animal Welfare. (csa) (Entered: 07/31/2007
07/16/2007	46	DECLARATION of Michael Jasny in Support of Plaintiffs' MOTION for Preliminary Injunction 14 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, National Resources Defense Council Inc, International Fund for Animal Welfare. (csa) (Entered: 07/31/2007)

* * * * *

DATE	DOCKET NUMBER	PROCEEDINGS
08/02/2007	48	ORDER by Judge Florence-Marie Cooper: The EX PARTE APPLICATION of Plaintiffs Natural Resources Defense Council, Inc, et al for Leave to File Under Seal (1) Plaintiffs' Reply Memorandum in Support of Plaintiffs' Motion for Preliminary Injunction; (2) Declaration of Michael Jasny in Support of Plaintiffs' Motion for Preliminary Injunction; and (3) Exhibits A through E thereto 41 is hereby GRANTED. The following documents shall be filed under seal: (1) Plaintiffs' Reply Memorandum in Support of Plaintiffs' Motion for Preliminary Injunction; (2) Declaration of Michael Jasny in Support of Plaintiffs' Motion for Preliminary Injunction; and Exhibits A through E to that declaration. IT IS SO ORDERED. (pcl) (Entered: 08/02/2007)
08/02/2007	54	SEALED DOCUMENT-REPLY MEMORANDUM

DATE	DOCKET NUMBER	PROCEEDINGS
		in support of Plaintiffs' MOTION for Preliminary Injunction 14 filed. (ad) (Entered: 08/22/2007)
08/02/2007	55	SEALED DOCUMENT - DECLARATION of Michael Jasny in support of MOTION for Preliminary Injunction 14 filed. (ad) (Entered: 08/22/2007)
08/06/2007	49	MINUTES OF HEARING OF: PLAINTIFFS MOTION FOR PRLIMINARY INJUNCTION (docket #14); DEFENDANTS MOTION TO DISMISS OR STAY (docket #21) held before Judge Florence-Marie Cooper: The Court, having previously issued its tentative ruling in the above-referenced motions, now hears oral argument. The Court DENIES the Motion to Dismiss and GRANTS the defendants' request for 30 days to respond to the complaint.The Motion for Preliminary Injunction is GRANTED and

DATE	DOCKET NUMBER	PROCEEDINGS
		the request for a stay to appeal is DENIED.Court Reporter: P. Cuneo.(ama) (Entered: 08/07/2007)
08/07/2007	50	ORDER DENYING DEFENDANTS' MOTION TO DISMISS OR STAY AND GRANTING IN PART AND DENYING IN PART PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION by Judge Florence-Marie Cooper: re MOTION for Preliminary Injunction 14 , MOTION to Dismiss/Stay Case 21 .This matter is before the Court on Defendants' Motion to Dismiss or Stay (docket no. 14) and Plaintiffs' Motion for Preliminary Injunction (docket no. 21), filed June 22, 2007. The Court has read and considered the moving, opposition, and reply documents submitted in connection with these motions. The matter was heard on August 6, 2007, at which time the parties were in receipt of the

DATE	DOCKET NUMBER	PROCEEDINGS
		Court's Tentative Order. For the reasons and in the manner set forth below, the Court hereby GRANTS IN PART AND DENIES IN PART Plaintiffs Motion for Preliminary Injunction and DENIES Defendants Motion to Dismiss or Stay. The Court hereby DENIES Defendants' Motion to Dismiss or Stay (docket no. 14). In addition, Defendants' request during oral argument for a stay of the requested injunctive relief pending appeal is DENIED. The Court GRANTS Plaintiffs' Motion for Preliminary Injunction (docket no. 21) as to Plaintiffs first four causes of action, for violations of NEPA, the CZMA, and the APA, and DENIES Plaintiffs' Motion as to Plaintiffs' fifth cause of action for violation of the ESA and the APA. Defendants are hereby enjoined from using MFA sonar during the fourteen challenged

DATE	DOCKET NUMBER	PROCEEDINGS
		COMPTUEX and JTFEX exercises planned in the SOCAL range through January 2009. IT IS SO ORDERED. (ama) (Entered: 08/07/2007)
08/14/2007	51	NOTICE OF APPEAL; Representation Statement and Civil Appeals Docketing Statement to 9th CCA filed by defendant Donald C Winter, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. re Appeal of Order *50* . Filed On: 8/7/2007; Entered On: 8/7/2007; Filing fee $ 455, billed. cc: Michael R Eitel; Richard Kendall; Joel r. Reyolds (dmap) (Entered: 08/16/2007)
		* * * * *
09/08/2007	57	RECORD ON APPEAL sent to Circuit Court re: Appeal number, 07-56157 Record consists of 4 volumes re Appeal to 9th Circuit Court of

DATE	DOCKET NUMBER	PROCEEDINGS
		Appeals 51. (dmap) (Entered: 09/28/2007)
10/02/2007	58	APPEAL RECORD sealed documents sent to Circuit Court re: Appeal number, 07-56157. Two (2) documents were sent with this transmittal. Document numbers S00054, S00055. Re: Appeal to 9th Circuit Court of Appeals 51. (dmap) (Entered: 10/02/2007)
11/14/2007	59	MINUTES OF IN CHAMBERS ORDER SETTING STATUS CONFERENCE by Judge Florence-Marie Cooper: The Court is in receipt of the Order from the Ninth Circuit Court of Appeals, lifting the stay on this Court's preliminary injunction and remanding the matter for further proceedings. The matter is set for status conference with the Court on Tuesday, November 27, 2007, at 10:00 a.m. Counsel are to be prepared to discuss the proper procedure by which

DATE	DOCKET NUMBER	PROCEEDINGS
		to resolve the question of whichnarrowly tailored mitigation measures would enable the Navy's operations to proceed and, at the sametime, provide satisfactory safeguards for the protection of the environment. (ama) (Entered: 11/14/2007)
11/27/2007	60	MINUTES OF CONFERENCE AFTER REMAND held before Judge Florence-Marie Cooper: A status conference is held. The Court and counsel confer re the mitigation measures regarding the preliminary injunction. The Court orders parties to meet and confer by December 3, 2007 in an effort to agree to stipulated mitigation measures. In the event they are unable to agree, the Court orders parties to submit simultaneous briefing by December 14, 2007. Responsive briefs shall be filed by December 21,2007. Opening briefs shall not exceed 30 pages; responsive briefs shall

DATE	DOCKET NUMBER	PROCEEDINGS
		not exceed 15 pages. Defendants request leave of court to submit certain classified declarations in camera. The Court grants defendants request. The parties will arrange to provide the Court with a tour of the naval facilities in San Diego. The Court Clerk will contact counsel to schedule such a visit. In light of the current briefing schedule regarding the preliminary injunction, the Court orders that the time for defendants to answer the complaint be extended to January 31, 2008. Court Reporter: Pat Cuneo. (csl) (Entered: 11/27/2007)
		* * * * *
12/12/2007	62	BRIEF filed by Intervenor California Coastal Commission on Proposed Mitigation Measures for Preliminary Injunction regarding Status Conference 60 (se) (Entered: 12/14/2007)

DATE	DOCKET NUMBER	PROCEEDINGS
12/14/2007	64	DECLARATION of Luther L. Hajek in Support of Defendants' Memorandum Regarding a Tailored Preliminary Injunction filed by Defendant Donald C Winter. (csi) (Entered: 12/18/2007)
12/14/2007	65	NOTICE Regarding Submission of Classified Declaration for Ex Parte and In Camera Review filed by Defendants. (csi) (Entered: 12/19/2007)
12/14/2007	66	MEMORANDUM Regarding a Tailored Preliminary Injunction filed by Defendants. (csi) (Entered: 12/19/2007)
12/14/2007	67	DECLARATION of Rear Admiral John M. Bird in Support of Defendants' Memorandum Regarding a Tailored Preliminary Injunction 66 filed by Defendants. (csi) (Entered: 12/19/2007)
12/14/2007	68	UNOPPOSED EX PARTE APPLICATION for Leave to File Under Seal (1) Plaintiffs' Opening Brief Regarding Appropriate Mitigation

DATE	DOCKET NUMBER	PROCEEDINGS
		Measures for the Remaining SoCal Exercises; and (2) Related Documents filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. Lodged Proposed Order and under seal documents.(csi) (Entered: 12/20/2007)
12/14/207	69	DECLARATION of Josh B. Gordon in Support of Plaintiffs' Ex Parte Application for Leave to File Under Seal (1) Plaintiffs' Opening Brief Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises; and (2) Related Documents 68 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund

DATE	DOCKET NUMBER	PROCEEDINGS
		for Animal Welfare. (csi) (Entered: 12/20/2007)
12/14/2007	70	DECLARATION of Josh B. Gordon in Support of Plaintiffs' Opening Brief Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (csi) (Entered: 12/20/2007)
12/14/2007	71	DECLARATION of John Calambokidis filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (csi) (Entered: 12/20/2007)

DATE	DOCKET NUMBER	PROCEEDINGS
12/14/2007	72	DECLARATION of David E. Bain filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (csi) (Entered: 12/20/2007)
12/14/2007	73	SUPPLEMENTAL DECLARATION of Edward C. M. Parsons filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (csi) (Entered: 12/20/2007)
12/14/2007	74	SUPPLEMENTAL DECLARATION of Robin William Baird filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Jean-Michel

DATE	DOCKET NUMBER	PROCEEDINGS
		Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (csi) (Entered: 12/20/2007)
		* * * * *
12/17/2007	76	ORDER by Judge Florence-Marie Cooper GRANTING EX PARTE APPLICATION for Leave to File Under Seal 1) Plaintiffs' Opening Brief regarding appropriate mitigation measures for the remaining Socal exercises; and 2) related documents 68. (mg) (Entered: 12/20/2007)
12/17/2007	119	SEALED DOCUMENT-Plaintiffs' OPENING BRIEF Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises filed. (ad) (Entered: 01/16/2008)
12/17/2007	120	SEALED DOCUMENT-EXHIBIT 4 to Declaration of Josh B Gordon filed in support of Opening Brief Regarding Appropriate Miti-

DATE	DOCKET NUMBER	PROCEEDINGS
		gation Measures for the Remaining SoCal Exercises 119. (ad) (Entered: 01/16/2008)
12/17/2007	121	UNOPPOSED EX PARTE APPLICATION for Leave to File Under Seal (1)Plaintiffs' Opening Brief Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises and (2) Related Documents filed by plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. Lodged Proposed Order.(ad) (Entered: 01/16/2008)
12/17/2007	122	NOTICE OF ERRATA concerning Plaintiffs' Unopposed EX PARTE APPLICATION for Leave to File Under Seal (1)Plaintiffs' Opening Brief Regarding Appropriate Mitigation Mea-

DATE	DOCKET NUMBER	PROCEEDINGS
		sures for the Remaining SoCal Exercises and (2) Related Documents 121 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (ad) (Entered: 01/16/2008)
12/17/2007	124	DECLARATION of Josh B Gordon in support of Plaintiffs' EX PARTE APPLICATION for Leave to File Under Seal (1)Plaintiffs' Opening Brief Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises and (2)Related Documents 121 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal

DATE	DOCKET NUMBER	PROCEEDINGS
		Welfare. (ad) (Entered: 01/16/2008)
		* * * * *
12/18/2007	94	SEALED DOCUMENT-EXHIBIT 4 filed to Declaration of Josh B Gordon in support of Plaintiffs' Opening Brief Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises. (ad) (Entered: 01/04/2008)
12/18/2007	123	OPENING BRIEF Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises filed by plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. REDACTED COPY (ad) Modified on 1/16/2008 (ad,). (Entered: 01/16/2008)
12/18/2007	125	SEALED DOCUMENT-DECLARATION of Josh B

DATE	DOCKET NUMBER	PROCEEDINGS
		Gordon in support of Plaintiffs' Opening Brief Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises 123 filed. (ad) (Entered: 01/16/2008)
12/18/2007	128	ORDER by Judge Florence-Marie Cooper GRANTING Plaintiffs' UNOPPOSED EX PARTE APPLICATION for Leave to File Under Seal (1) Plaintiffs' Opening Brief Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises and (2)Related Documents 121. IT IS SO ORDERED. (ad) (Entered: 01/17/2008)
		* * * * *
12/21/2007	78	RESPONSE to to the California Coastal Commission's Brief on Proposed Mitigation Measures for Preliminary Injunction 62 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth,

DATE	DOCKET NUMBER	PROCEEDINGS
		Conrad C Lautenbacher, Jr (mg) (Entered: 12/27/2007)
12/21/2007	79	RESPONSE to Plaintiffs' Opening Brief Regarding Appropriate Mitigation Measures for the Remaining Socal Exercise 62 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr (mg) (Entered: 12/27/2007)
12/21/2007	80	SUPPLEMENTAL DECLARATION of Rear Admiral John M. Bird in Support of Defendants' Memorandum Regarding a Tailored Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (mg) (Entered: 12/27/2007)

DATE	DOCKET NUMBER	PROCEEDINGS
12/21/2007	81	SECOND SUPPLEMENTAL DECLARATION of Rear Admiral John M Bird in Support of Defendants' Memorandum Regarding a Tailored Preliminary Injunction 14 filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (mg) (Entered: 12/27/2007)
12/21/2007	82	REPLY BRIEF on Mitigation Measures for Preliminary Injunction 14 filed by Intervenor California Coastal Commission. (mg) (Entered: 12/27/2007)
12/21/2007	83	UNOPPOSED EX PARTE APPLICATION for Leave to to file under seal Plaintiffs' Response Brief regarding appropriate mitigation measures for the remaining Socal exercises; filed by Plaintiffs Cetacean Society International, League for Coastal

DATE	DOCKET NUMBER	PROCEEDINGS
		Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. Lodged proposed order; responsive brief (under seal). (mg) (Entered: 12/27/2007)
12/21/2007	84	DECLARATION of Alison L. Plessman in support of Unopposed EX PARTE APPLICATION for Leave to to file under seal Plaintiffs' Response Brief regarding appropriate mitigation measures for the remaining Socal exercises 83 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (mg) (Entered: 12/27/2007)
12/21/2007	85	RESPONSIVE BRIEF (redacted copy) Regarding ap-

DATE	DOCKET NUMBER	PROCEEDINGS
		propriate mitigation measures for the remaining Socal exercises 83 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (mg) (Entered: 12/27/2007)
		* * * * *
12/26/2007	88	Plaintiffs' OBJECTIONS to Defendants' Response to Plaintiffs' Opening Brief 78 , Response to California Coastal Commission's Brief 79 , Supplemental Declaration of Rear Admiral Bird) 81 , Second Supplemental Declaration of Rear Admitial Bird 80 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Natural Resources Defense Council Inc, International Fund for Animal Welfare,

DATE	DOCKET NUMBER	PROCEEDINGS
		Jean-Michel Cousteau. (se) (Entered: 01/02/2008)
12/26/2007	89	DECLARATION of Gregory A. Fayer re Objections - non-motion, 88 filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Natural Resources Defense Council Inc, International Fund for Animal Welfare, Jean-Michel Cousteau. (se) (Entered: 01/02/2008)
		* * * * *
12/26/2007	127	SEALED DOCUMENT-RESPONSIVE BRIEF Regarding Appropriate Mitigation Measures for the Remaining SoCal Exercises filed. (ad) (Entered: 01/16/2008)
12/26/2007	129	ORDER by Judge Florence-Marie Cooper GRANTING Plaintiffs' UNOPPOSED EX PARTE APPLICATION for Leave to file under seal Plaintiffs' Response Brief regard-

DATE	DOCKET NUMBER	PROCEEDINGS
		ing appropriate mitigation measures for the remaining Socal exercises 83 . IT IS SO ORDERED. (ad) (Entered: 01/17/2008)
12/28/2007	95	Defendants' Reponse to Plaintifs' Objection 88 to Defendants' Response Regarding Appropriate Mitigation Measures for the Remaining Socal Exercises re 83 filed by Defendant Donald C Winter. (csi) (Entered: 01/04/2008)
01/03/2008	91	ORDER ISSUING PRELIMINARY INJUNCTION by Judge Florence-Marie Cooper: SEE ORDER FOR DETAILS. (csl) (Entered: 01/03/2008)
		* * * * *
01/03/2008	115	AMENDED MINUTES (IN CHAMBERS) held before Judge Florence-Marie Cooper: Proceedings: Order re Plaintiff's Request to Strike. The Court has received Plaintiffs' Objection to Defendants' Response to Plaintiffs'

DATE	DOCKET NUMBER	PROCEEDINGS
		Opening Brief (docket no. 88), filed December 26, 2007. As the Court did not rely on the disputed documents in its January 3, 2008 Order Issuing Preliminary Injunction (docket no. 91), Plaintiffs' request to strike the disputed documents is DENIED AS MOOT. (mg) (Entered: 01/15/2008)
01/09/2008	96	EX PARTE APPLICATION to Stay pending Appeal filed by Defendant Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Attachments: # *1* Proposed Order) (Hajek, Luther) (Entered: 01/09/2008)
01/09/2008	97	MEMORANDUM in Support of EX PARTE APPLICATION to Stay pending Appeal *96* filed by Defendants Donald C Winter, United States Department of

DATE	DOCKET NUMBER	PROCEEDINGS
		the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Hajek, Luther) (Entered: 01/09/2008)
01/09/2008	98	DECLARATION of Michael R. Eitel in support of EX PARTE APPLICATION to Stay pending Appeal *96* filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Attachments: *# 1* Exhibit 1*# 2* Exhibit 2*# 3* Exhibit 3)(Hajek, Luther) (Entered: 01/09/2008)
01/09/2008	99	EX PARTE APPLICATION for Leave to Submit Classified Evidence for Ex Parte and In Camera Review filed by defendant Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine

DATE	DOCKET NUMBER	PROCEEDINGS
		Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Attachments: # *1* Proposed Order) (Eitel, Michael) (Entered: 01/09/2008)
01/09/2008	100	MEMORANDUM in Support of EX PARTE APPLICATION for Leave to Submit Classified Evidence for Ex Parte and In Camera Review *99* filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Eitel, Michael) (Entered: 01/09/2008)
01/09/2008	101	DECLARATION of Michael R. Eitel in support of EX PARTE APPLICATION for Leave to Submit Classified Evidence for Ex Parte and In Camera Review *99* filed by Defendants Donald C Winter, United States Department of the Navy, Carlos

DATE	DOCKET NUMBER	PROCEEDINGS
		M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Attachments: # *1* Exhibit 1# *2* Exhibit 2# *3* Exhibit 3# *4* Exhibit 4# *5* Exhibit 5)(Eitel, Michael) (Entered: 01/09/2008)
01/10/2008	102	ORDER ISSUING MODIFIED PRELIMINARY INJUNCTION by Judge Florence-Marie Cooper: SEE ORDER FOR DETAILS. (csl) (Entered: 01/10/2008)
01/10/2008	103	MODIFIED PRELIMINARY INJUNCTION by Judge Florence-Marie Cooper: SEE ORDER FOR DETAILS. (csl) (Entered: 01/10/2008)
01/11/2008	104	ORDER by Judge Florence-Marie Cooper, GRANTING EX PARTE APPLICATION for Leave to Submit Classified Evidence for Ex Parte and In Camera Review *99*. (ca) (Entered: 01/11/2008)

DATE	DOCKET NUMBER	PROCEEDINGS
01/11/2008	105	NOTICE OF APPEAL to the 9th CCA filed by defendant Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. Appeal of Preliminary Injunction *103*, Preliminary Injunction *91*, Order *102* (Attachments: # *1* Exhibit A# *2* Exhibit B# *3* Exhibit C# *4* Exhibit D# *5* Exhibit E)(Eitel, Michael) (Entered: 01/11/2008)
		* * * * *
01/11/2008	107	MEMORANDUM in Opposition to EX PARTE APPLICATION to Stay pending Appeal *96 [Redacted Copy]* filed by Plaintiff Natural Resources Defense Council Inc. (Gordon, Joshua) (Entered: 01/11/2008)
01/11/2008	138	UNOPPOSED EX PARTE APPLICATION for Leave to File Under Seal Plaintiffs' Memorandum of Points and

DATE	DOCKET NUMBER	PROCEEDINGS
		Authorities in Opposition to Defendants' Ex Parte Application for stay pending appeal filed by plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare.(ad) (Entered: 01/23/2008)
01/11/2008	139	DECLARATION of Josh B Gordon in support of UNOPPOSED EX PARTE APPLICATION for Leave to File Under Seal Plaintiffs' Memorandum of Points and Authorities in Opposition to Defendants' Ex Parte Application for stay pending appeal *138* filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (ad) (Entered: 01/23/2008)

DATE	DOCKET NUMBER	PROCEEDINGS
01/11/2008	141	SEALED DOCUMENT-Plaintiffs' MEMORANDUM of Points and Authorities in Opposition to Defendants' EX PARTE APPLICATION to Stay pending Appeal *96* filed. (ad) (Entered: 01/23/2008)
01/13/2008	108	REPLY in support of EX PARTE APPLICATION to Stay pending Appeal *96* filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Hajek, Luther) (Entered: 01/13/2008)
01/13/2008	109	DECLARATION of Vice Admiral Samuel J. Locklear III, U.S. Navy, in support of EX PARTE APPLICATION to Stay pending Appeal *96* filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Ma-

DATE	DOCKET NUMBER	PROCEEDINGS
		rine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Attachments: *# 1* Exhibit 1*# 2* Exhibit 2*# 3* Exhibit 3*# 4* Exhibit 4*# 5* Exhibit 5*# 6* Exhibit 6*# 7* Exhibit 7) (Eitel, Michael) (Entered: 01/13/2008)
01/13/2008	110	OBJECTIONS to Reply (Motion related), Reply (Motion related) *108*, Declaration (Motion related), Declaration (Motion related) *109 [Objections to Evidence]* filed by Plaintiff Natural Resources Defense Council Inc. (Gordon, Joshua) (Entered: 01/13/2008)
01/14/2008	111	RESPONSE TO OBJECTIONS TO EVIDENCE re EX PARTE APPLICATION to Stay pending Appeal *96* filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C

DATE	DOCKET NUMBER	PROCEEDINGS
		Lautenbacher, Jr. (Eitel, Michael) (Entered: 01/14/2008)
01/14/2008	112	JOINDER filed by Intervenor California Coastal Commission joining in MEMORANDUM in Opposition to Motion *107*. (Patterson, Jamee) (Entered: 01/14/2008)
01/14/2007	113	MINUTES OF IN CHAMBERS ORDER STRIKING DEFENDANTS EVIDENCE SUBMITTED IN CONNECTION WITH ITS REPLY IN SUPPORT OF EX PARTE APPLICATION by Judge Florence-Marie Cooper: re: Objections-non-motion *110* . This matter is before the Court on Plaintiffs Objections to Evidence in Opposition to Defendants Ex Parte Application for Stay Pending Appeal (docket no. 110), filed January 13, 2007. The Court has read and considered both Plaintiffs objections and Defen-

DATE	DOCKET NUMBER	PROCEEDINGS
		dants response thereto. Plaintiffs objections to Defendants submission of new evidence in connection with its reply are well- taken. The Court therefore read and considered Defendants reply, but not the additional evidence. Defendants did not seek the Courts leave to submit this additional evidence, nor was there sufficient time to allow a response by Plaintiffs. See Local Rule 7-10. Accordingly, the Court orders that Defendants additional evidence submitted in connection with its reply be stricken from the record. IT IS SO ORDERED. (csl) (Entered: 01/14/2008)
01/14/2007	114	ORDER DENYING DEFENDANTS MOTION FOR STAY PENDING APPEAL by Judge Florence-Marie Cooper, re EX PARTE APPLICATION to Stay pending Appeal *96*: SEE ORDER FOR DETAILS. (csl) (Entered: 01/14/2008)

DATE	DOCKET NUMBER	PROCEEDINGS
01/14/2008	140	ORDER by Judge Florence-Marie Cooper GRANTING Plaintiffs' UNOPPOSED EX PARTE APPLICATION for Leave to File Under Seal Plaintiffs' Memorandum of Points and Authorities in Opposition to Defendants' Ex Parte Application for stay pending appeal *138* . IT IS SO ORDERED. (ad) (Entered: 01/23/200 8)
01/16/2008	116	NOTICE of Presidential and Administrative Actions filed by defendant Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Eitel, Michael) (Entered: 01/16/2008)
01/16/2008	117	DECLARATION of Michael R. Eitel re Notice (Other) *116 of Presidential and Administrative Actions* filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M

DATE	DOCKET NUMBER	PROCEEDINGS
		Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Attachments: # *1* Exhibit 1# *2* Exhibit 2# *3* Exhibit 3)(Eitel, Michael) (Entered: 01/16/2008)
		* * * * *
01/17/2008	130	NOTICE of Intent to Oppose Ex Parte Application filed by Plaintiff Natural Resources Defense Council Inc. (Gordon, Joshua) (Entered: 01/17/2008)
01/17/2008	131	EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103*, Order,,,,,, *50*, Preliminary Injunction *91* , Order *114* , Order *102* filed by defendant Donald C Winter, United States Department of the Navy, Carlos M Gutierrez,

DATE	DOCKET NUMBER	PROCEEDINGS
		National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Attachments: # *1* Proposed Order # *2* Declaration of Luther L. Hajek# *3* Exhibit 1# *4* Exhibit 2)(Hajek, Luther) (Entered: 01/17/2008)
01/17/2008	132	DECLARATION of Michael R. Eitel in support of EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103* , Order,,,,,, *50*, Preliminary Injunction *91* , Order *114* , Order *102* EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103* , Order,,,,,, *50* , Preliminary Injunction *91* , Order *114* , Order *102* EX PARTE APPLICATION to Stay pending

DATE	DOCKET NUMBER	PROCEEDINGS
		Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103* , Order,,,,,, *50* , Preliminary Injunction *91* , Order *114* , Order *102* *131* filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Attachments: *# 1* Exhibit 1*# 2* Exhibit 2*# 3* Exhibit 3*# 4* Exhibit 4*# 5* Exhibit 5*# 6* Exhibit 6*# 7* Exhibit 7*# 8* Exhibit 8*# 9* Exhibit 9*# 10* Exhibit 10*# 11* Exhibit 11*# 12* Exhibit 12*# 13* Exhibit 13*# 14* Exhibit 14*# 15* Exhibit 15*# 16* Exhibit 16, Part 1*# 17* Exhibit 16, Part 2*# 18* Exhibit 16, Part 3*# 19* Exhibit 16, Part 4*# 20* Exhibit 16, Part 5*# 21* Exhibit 16,

DATE	DOCKET NUMBER	PROCEEDINGS
		Part 6# *22* Exhibit 16, Part 7# *23* Exhibit 16, Part 8# *24* Exhibit 16, Part 9# *25* Exhibit 17# *26* Exhibit 18# *27* Exhibit 19# *28* Exhibit 20# *29* Exhibit 21# *30* Exhibit 22# *31* Exhibit 23# *32* Exhibit 24)(Eitel, Michael) (Entered: 01/17/2008)
01/17/2008	133	ORDER FOR TEMPORARY PARTIAL STAY AND SETTING BRIEFING SCHEDULE by Judge Florence-Marie Cooper: (SEE ORDER FOR DETAILS) Accordingly, it is hereby ORDERED that the January 3, 2008 Order Issuing Preliminary Injunction, as modified on January 10, 2008 is partially STAYED until further Order of this Court. Plaintiffs have until Tuesday, January 22, 2008 to file opposition to Defendants Ex Parte Application to Vacate. Any reply by Defendants is to be filed no later than Friday, January 25, 2008. (SEE OR

DATE	DOCKET NUMBER	PROCEEDINGS
		DER FOR DETAILS) (csl) (Entered: 01/17/2008)
01/22/2008	134	NOTICE of Manual Filing filed by Plaintiff Natural Resources Defense Council Inc of Supplemental Declaration of Josh B. Gordon In Support Of Plaintiffs' Opposition to Defendants' Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal. (Gordon, Joshua) (Entered: 01/22/2008)
01/22/2008	135	OPPOSITION to EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103* , Order,,,,,, *50* , Preliminary Injunction *91* , Order *114* , Order *102* EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunc

DATE	DOCKET NUMBER	PROCEEDINGS
		tion *103* , Order,,,,,, *50* , Preliminary Injunction *91* , Order *114* , Order *102* EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103* , Order,,,,,, *50* , Preliminary Injunction *91* , Order *114* , Order *102 131* filed by Intervenor California Coastal Commission. (Patterson, Jamee) (Entered: 01/22/2008)
01/22/2008	136	MEMORANDUM in Opposition to EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103* , Order,,,,,, *50* , Preliminary Injunction *91* , Order *114* , Order *102* EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate

DATE	DOCKET NUMBER	PROCEEDINGS
		Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103* , Order,,,,,, *50* , Preliminary Injunction *91* , Order *114* , Order *102* EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103* , Order,,,,,, *50* , Preliminary Injunction *91* , Order *114* , Order *102* *131 Memorandum of Points and Authorities in Opposition to Defendants' Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal* filed by Plaintiff Natural Resources Defense Council Inc. (Gordon, Joshua) (Entered: 01/22/2008)
01/22/2008	137	DECLARATION of Nicholas C. Yost re MEMORANDUM in Opposition to Motion,,,, 136 *Declaration of Nicholas C. Yost in Support of Plain-*

DATE	DOCKET NUMBER	PROCEEDINGS
		tiffs' Opposition to Defendants' Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal filed by Plaintiff Natural Resources Defense Council Inc. (Gordon, Joshua) (Entered: 01/22/2008)
01/23/2008	142	EX PARTE APPLICATION for Leave to Unopposed Ex Parte Application for leave to produce documents to comply with the order of the United States District Court for the District of Hawaii filed by Defendant Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Attachments: # *1* Proposed Order # *2* Memorandum of Points and Authorities in Support of Defendants' Unopposed Ex Parte Application for Leave to Produce Documents to Comply with the Order of the

DATE	DOCKET NUMBER	PROCEEDINGS
		United States District Court for the District of Hawaii# *3* Declaration # *4* Exhibit A# *5* Exhibit B# *6* Exhibit C# *7* Exhibit D# *8* Exhibit E# *9* Exhibit F# *10* Exhibit G# *11* Exhibit H)(Hajek, Luther) (Entered: 01/23/2008)
01/23/2008	151	UNOPPOSED EX PARTE APPLICATION for Leave to File Under Seal the Supplemental Declaration of Josh B Gordon in support of Opposition to Defendants' Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal filed by plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare.(ad) (Entered: 01/30/2008)
01/23/2008	152	DECLARATION of Josh B Gordon in support of UNOPPOSED EX PARTE APPLI-

DATE	DOCKET NUMBER	PROCEEDINGS
		CATION for Leave to File Under Seal the Supplemental Declaration of Josh B Gordon in support of Opposition to Defendants' Ex Parte Application *151* filed by Plaintiffs Cetacean Society International, League for Coastal Protection, Ocean Futures Society, Jean-Michel Cousteau, Natural Resources Defense Council Inc, International Fund for Animal Welfare. (ad) (Entered: 01/30/2008)
01/23/2008	154	ORDER by Judge Florence-Marie Cooper GRANTING Plaintiffs' UNOPPOSED EX PARTE APPLICATION for Leave to File Under Seal the Supplemental Declaration of Josh B Gordon in support of Opposition to Defendants' Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal 151. IT IS SO ORDERED. (ad) (Entered: 01/30/2008)

DATE	DOCKET NUMBER	PROCEEDINGS
01/23/2008	155	SEALED DOCUMENT-SUPPLEMENTAL DECLARATION of Josh B Gordon in support of Plaintiffs' Opposition to Defendants' Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal filed. (ad) (Entered: 01/31/2008)
01/24/2008	143	ORDER by Judge Florence-Marie Cooper, re EX PARTE APPLICATION for Leave to Unopposed Ex Parte Application for leave to produce documents to comply with the order of the United States District Court for the District of Hawaii *142*: Accordingly, it is hereby ORDERED that Defendants Unopposed Ex Parte Application for Leave to Produce Documents to Comply With the Order of the United States District Court for the District of Hawaii is hereby GRANTED. SEE ORDER FOR DETAILS. (csl) (Entered: 01/25/2008)

DATE	DOCKET NUMBER	PROCEEDINGS
		* * * * *
01/25/2008	144	REPLY in support of EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103*, Order,,,,,, *50*, Preliminary Injunction *91*, Order *114*, Order *102* EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103*, Order,,,,,, *50* , Preliminary Injunction *91* , Order *114*, Order *102* EX PARTE APPLICATION to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to Partially Stay Pending Appeal re: Preliminary Injunction *103* , Order,,,,,, *50*, Preliminary Injunction *91*,

DATE	DOCKET NUMBER	PROCEEDINGS
		Order *114*, Order *102 131* filed by Defendants Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Hajek, Luther) (Entered: 01/25/2008)
		* * * * *
01/29/2007	150	ANSWER filed by defendant Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. (Eitel, Michael) (Entered: 01/29/2008)
01/30/2008	156	MINUTES of Motion Hearing held before Judge Florence-Marie Cooper: The Court hears oral argument on Defendants Ex Parte Application to Stay pending Consideration of Ex Parte Application to Vacate Preliminary Injunction or to

DATE	DOCKET NUMBER	PROCEEDINGS
		Partially Stay Pending Appeal re: Preliminary Injunction [docket #131]. The Court takes the matter under submission. Court Reporter: Pam Seijas. (kpa) (Entered: 01/31/2008)
01/31/2008	157	DECLARATION of Josh B. Gordon re MEMORANDUM in Opposition to Motion,,,, *136 [Redacted Version]* filed by Plaintiff Natural Resources Defense Council Inc. (Gordon, Joshua) (Entered: 01/31/2008)
		* * * * *
02/04/2008	160	ORDER DENYING DEFENDANT'S EX PARTE APPLICATION TO VACATE PRELIMINARY INJUNCTION OR TO PARTIALLY STAY PENDING APPEAL AND ORDER VACATING TEMPORARY STAY by Judge Florence-Marie Cooper: SEE ORDER FOR DETAILS. CONCLUSION: The Navy's Ex Parte Application, docket no. 131,

DATE	DOCKET NUMBER	PROCEEDINGS
		is denied in its entirety. The temporary partial stay, docket no. 133, is lifted. (csl) (Entered: 02/04/2008)
02/06/2008	161	NOTICE OF APPEAL to the 9th CCA filed by defendant Donald C Winter, United States Department of the Navy, Carlos M Gutierrez, National Marine Fisheries Service, William Hogarth, Conrad C Lautenbacher, Jr. Appeal of Order, *160*, Preliminary Injunction *103*, Preliminary Injunction *91*, Order *102* FEE WAIVED. (Attachments: # *1* Exhibit A# *2* Exhibit B# *3* Exhibit C# *4* Exhibit D) (Eitel, Michael) (Entered: 02/06/2008)
		* * * * *
02/19/2008	165	TRANSCRIPT filed for proceedings held on 1/30/08 Court Reporter: Pamela A. Seijas. (ha) (Entered: 02/20/2008)
03/11/2008	166	TRANSCRIPT filed for proceedings held on 11/27/07 re Status Conference. Court

DATE	DOCKET NUMBER	PROCEEDINGS
		Reporter: Pat Cuneo. (ml) (Entered: 03/11/2008)
04/22/2008	167	MANDATE of 9th CCA filed re: Notice of Appeal to 9th Circuit Court of Appeals *161*, CCA # 08-55054. The Judgment of District Court is Affirmed. Mandate received in this district on 04/25/08. (cbr) (Entered: 04/29/2008)
		* * * * *
06/12/2008	169	MANDATE of 9th CCA filed re: Notice of Appeal to 9th Circuit Court of Appeals, *161*, CCA # 07-56157. The stay is VACATED as of the time provided above, and the matter is REMANDED for the district court to enter a modified preliminary injunction containing appropriate mitigrating conditions. Mandate received in this district on 6/30/08. (lr) (Entered: 07/02/2008)

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

No. 8:07-cv-0035-FMC-FMOx

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

ORDER DENYING DEFENDANT'S MOTION FOR STAY PENDING APPEAL

This matter is before the Court on Defendants' Ex Parte Application For Stay Pending Appeal (docket no. 96), filed January 9, 2008. The Court has read and considered Defendants' Application, Plaintiffs' Opposition, and Defendants' Reply thereto. The Court deems this matter appropriate for decision without oral argument. *See* Fed. R. Civ. P. 78(b); Local Rule 7-15. For the reasons and in the manner set forth below, the Court hereby DENIES Defendants' application.

DISCUSSION

When considering whether to issue a stay pending appeal, the district court must consider the following factors: "(1) whether the stay applicant has made a strong showing that he is likely to succeed on the merits; (2) whether the applicant will be irreparably injured absent a stay; (3) whether issuance of the stay will sub-

stantially injure the other parties interested in the proceeding; and (4) where the public interest lies." *Hilton v. Braunskill*, 481 U.S. 770, 776 (1987); *Arturovic v. Rison*, 784 F.2d 1354, 1355 (9th Cir. 1986); Fed. R. Civ. P. 62(c). Alternatively, the court may grant a stay if the party seeking the stay "demonstrates . . . that serious questions are raised and the balance of hardships tips sharply in his favor." *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147, 1158 (9th Cir. 2006).

The Court finds the following:

First, Defendants have not demonstrated that they are likely to succeed on the merits once their appeal is heard. To the contrary, Defendants have attempted to show that they would be successful on an appeal that the Ninth Circuit has already decided—the appeal of the Court's August 7, 2007 Order enjoining naval training exercises. The matter was remanded to this Court only to construct mitigation measures that would allow naval training using mid-frequency active sonar to go forward, while minimizing the negative impact on the environment. Specifically, the Ninth Circuit instructed the Court to "determine the appropriateness of whatever conditions may be suggested by either party, or may advance such conditions on its own." *Natural Res. Def. Council v. Winter*, __ F.3d __, 2007 WL 3377229 *1. The Court has done so.

Second, the Court is cognizant that the imposition of these mitigation measures will require the Navy to alter and adapt the way it conducts antisubmarine warfare training—a substantial challenge. Nevertheless, evidence presented to the Court reflects that the Navy has employed mitigation measures in the past, without sacrificing training objectives. *See, e.g.*, Jan. 3, 2008 Order at

9 and evidence cited therein. The Court finds no basis for concluding that absent a stay, Defendants will suffer irreparable injury. Accordingly, this factor weighs against the imposition of a stay.

By contrast, if the Court were to issue a stay, the harm to Plaintiffs would be substantial. Having prevailed before the Ninth Circuit, Plaintiffs would nonetheless face unmitigated naval exercises. It is possible that the exercises at issue will be completed before Defendants' appeal could be heard, rendering moot months of litigation.

Finally, there are two aspects to public interest in this case: the public interest in having a well-trained Navy for the purpose of national defense and the public interest in the protection and maintenance of coastal resources, particularly marine mammals. If the Court were to grant the stay sought by Defendants, the training exercises at issue in this suit would go forward unmitigated, at the expense of coastal resources. By leaving the injunction in place, Defendants may go ahead with their training exercises, while limiting negative effects on marine life. Accordingly, the Court is satisfied that the public interest weighs against the issuance of a stay.

The Court cannot conclude that Defendants have raised "serious questions" and that the balance of hardships tips sharply in their favor. As stated above, the questions raised by the injunction have already been reviewed by the Ninth Circuit. Furthermore, the Navy may continue with its training exercises while their appeal is pending. The Court therefore cannot conclude that the balance of hardships tips sharply in Defendants' favor.

CONCLUSION

Defendants' Ex Parte Application for Stay Pending Appeal (docket no. 96) is DENIED.

IT IS SO ORDERED.

Dated: January 14, 2007

/s/ FLORENCE-MARIE COOPER
FLORENCE-MARIE COOPER, Judge
UNITED STATES DISTRICT COURT

National Marine Fisheries Service
Endangered Species Act Section 7 Consultation
Biological Opinion

Agency:		United States Navy, Pacific Fleet
Activities Considered:		Composite Training Unit Exercises and Joint Task Force Exercises, February 2007 – January 2009
Consultation Conducted By:		Protected Resources Division, Southwest Regional Office, National Marine Fisheries Service
Approved By:	/s/	ILLEGIBLE
Date:		[FEB 9, 2007]

Section 7(a)(2) of the Endangered Species Act (ESA; 16 U.S.C. § 1531 *et seq.*) requires that each Federal agency shall ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of critical habitat of such species. When the action of a Federal agency may affect a protected species or critical habitat, that agency is required to consult with either NOAA's National Marine Fisheries Service (NMFS) or the U.S. Fish and Wildlife Service, depending upon the protected species or critical habitat that may be affected. Federal agencies are exempt from this requirement to consult formally if they have concluded that an action "may affect, but is not likely to adversely affect" endangered species, threatened species, or desig-

nated critical habitat and NMFS or the U.S. Fish and Wildlife Service concur with that conclusion (50 CFR 402.14(b)).

This document represents NMFS' Biological Opinion (Opinion) based on our review of: (1) the draft EA/OEA for proposed Composite Training Unit Exercises and Joint Task Force Exercises activities (U.S. Navy 2006a; U.S. Navy 2007) and (2) ESA consultation package (and addendum), and the effects of these actions on blue whales (*Balaenoptera musculus*) fin whales (*Balaenoptera physalus*), humpback whales (*Megaptera novaeangliae*), sei whales (*Balaenoptera borealis*), sperm whales (*Physeter macrocephalus*), and Guadalupe fur seals (*Arctocephalus townsendi*) in accordance with section 7 of the ESA.

This Opinion is based on information from recovery plans for the whales, the most current marine mammal stock assessment reports, past and current research, and population dynamics modeling efforts.

Consultation History

On August 24, 2006, the Department of the Navy (Navy) sent the Office of Protected Resources, NMFS, in Silver Spring, Maryland, a request for consultation under Section 7 of the ESA for the Navy's proposed fourteen Composite Training Unit Exercises and Joint Task Force Exercises. Those materials included two enclosures: (1) a draft Environmental Assessment and Overseas Environmental Assessment (EA/OEA) and (2) a synthesis of information regarding potential effects to ESA-listed species under NMFS' jurisdiction.

On October 5, 2006, NMFS' Office of Protected Resources responded to the Navy's August 24, 2006, letter. In

that response, NMFS referred to an August 31, 2006, meeting in which NMFS representatives stated that NMFS would treat the Navy's request for consultation as incomplete until the Navy provided NMFS with a complete description of the action and any mitigation or other protective measures the Navy planned to implemented [*sic*] before NMFS would initiate formal consultation on the proposed exercises.

In mid-October, 2006, NMFS' Office of Protected Resources contacted NMFS' Southwest Regional Office to ask if the Regional Office would take the lead on the Section 7 consultation on the exercises proposed off southern California.

On October 16, 2006, representatives of the U.S. Navy provided NMFS' Office of Protected Resources and NMFS' Southwest Regional Office with copies of the final mitigation measures the Navy planned to implement, which completed the information the Navy needed to submit to initiate formal consultation on the exercises proposed off southern California. On December 18, 2006, the Navy memorialized these measures in a letter to the Director of NMFS' Office of Protected Resources.

On November 27, 2006, representatives of the U.S. Navy provided an addendum to the information the Navy had submitted to initiate formal consultation on the exercises the Navy proposed to conduct off southern California (Composite Training Unit / Joint Task Force Training Exercises). That addendum clarified the description of the proposed action, updated several exposure estimates, and updated mitigation measures associated with underwater detonations.

On November 28, 2006, personnel from the U.S. Navy's Undersea Warfare Center Division briefed personnel from NMFS Southwest Regional Office on the analyses it conducted to estimate the probable acoustic effects of the proposed exercises on marine mammals.

On December 6, 2006, biologists from NMFS' Southwest Regional Office met with the Navy, Pacific Fleet to clarify information contained in the materials the U.S. Navy submitted to initiate formal consultation on the exercises proposed off southern California.

On February 6, 2007, representatives of NMFS' Southwest Regional Office provided the U.S. Navy with an electronic copy of its draft biological opinion on the proposed exercises proposed off southern California from February 2007 through December 2008. On February 8, 2007, the Navy provided its comments on that draft document.

BIOLOGICAL OPINION

Description of the Proposed Action

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COMPTUEX and JTFEX Overview and Training Components

The proposed Composite Training Unit Exercises and Joint Task Force Exercises encompass a broad spectrum of forty-five naval training requirements ranging from Humanitarian Assistance and Embassy Reinforcement activities, to Anti-Submarine Warfare, Air-to-air Strike Missile operations, and Battalion Landings. The following narratives discuss only those aspects of proposed Composite Training Unit / Joint Task Force

Training Exercises activities that are necessary to understand their potential effects on threatened and endangered species under the jurisdiction of NMFS and any critical habitat that has been designated for them.

Carrier Strike Groups and Expeditionary Strike Groups conduct Composite Training Unit and Joint Task Force Training Exercises. A description of Carrier Strike Group and Expeditionary Strike Groups components is provided below:

Carrier Strike Groups — Carrier Strike Groups could be employed in a variety of roles, all of which would involve the gaining and maintenance of sea control. Carrier Strike Group typically consist of the following:

- An aircraft carrier
- Guided missile cruise — multi-mission surface combatants. Equipped with Tomahawks for long-range strike capability
- Two guided missile destroyers — multi mission surface combatants, used primarily for anti-air warfare (AAW)
- Attack submarine — direct support role seeking out and destroying hostile surface ships and submarines
- Combined ammunition, oiler, and supply ship — provides logistic support enabling the Navy's forward presence: on station, ready to respond.

[Diagram omitted]

Expeditionary Strike Group — Expeditionary Strike Groups center on the flexibility and readiness of a com-

bined expeditionary unit and an Amphibious Readiness Group. The total Expeditionary Strike Groups provides operational freedom and expanded warfare capabilities, not only by land with embarked Marines, but at sea, as well. A typical Expeditionary Strike Groups includes the following:

- Amphibious Assault Ship (LHA or LHD) — the largest of all amphibious warfare ships, these ships resemble small aircraft carriers capable of Vertical/Short Take Off and Landing (V/STOL), Short Take Off Vertical Landing (STOVL), Vertical Take Off and Landing (VTOL) tiltrotor and Rotary Wing (RW) aircraft operations. These ships contain a welldeck, which supports use of Landing Craft Air Cushion (LCAC) and other watercraft in amphibious operations off SCI and Camp Pendleton.
- Amphibious Transport Dock Ship (LPD) — warships that embark, transport, and land elements of a landing force for a variety of expeditionary warfare missions. The amphibious transports are used to transport, and land Marines, their equipment and supplies by embarked air cushion or conventional landing craft or amphibious vehicles, augmented by helicopters or vertical take off and landing aircraft in amphibious assault, special operations, or expeditionary warfare missions on SCI and Camp Pendleton.
- Dock Landing Ship (LSD) — dock landing ships support amphibious operations, including landings via Landing Craft Air Cushion (LCAC), conventional landing craft and helicopters, onto hos-

tile shores. These ships transport and launch amphibious craft and vehicles with their crews and embarked personnel in amphibious assault operations on SCI and Camp Pendleton.

- Guided Missile Cruiser (CG) — [Air Warfare (AW), Undersea Warfare (USW), and Surface Warfare (SUW)] surface combatants capable of supporting carrier strike groups, expeditionary strike groups, or operating independently and as flagships of surface action groups. CG utilize the AN/SQS 53 series mid-frequency active sonar during anti-submarine warfare operations
- Guided Missile Destroyer (DDG) — operate in support of Carrier Strike Groups and Expeditionary Strike Groups. Primarily perform anti-submarine warfare duty while guided missile destroyers are multi-mission [Anti-Air Warfare (AAW), Anti-Submarine Warfare (ASW), and Anti-Surface Warfare (ASUW)] surface combatants. DDG utilizes AN/SQS 53 series mid-frequency active sonar during Anti-Submarine Warfare operations.
- Frigate (FFG) — fulfill a Protection of Shipping (POS) mission as Anti-Submarine Warfare combatants for amphibious expeditionary forces, underway replenishment groups and merchant convoys. FFG utilizes AN/SQS 56 mid-frequency active SONAR during Anti-Submarine Warfare operations.
- Attack Submarine (in a direct support role seeking out and destroying hostile surface ships and submarines.

Composite Training Unit Exercises and Joint Task Force Training Exercises are complex, deployment preparation exercises formed into either a Carrier Strike Group or an Expeditionary Strike Group. Vessels, aircraft and personnel that may participate in these major exercises are not limited to those permanently stationed at bases within the Navy's Southwest Region. The participants typically include up to: (1) ten surface combatant ships; (2) three submarines; (3) one hundred aircraft; and (4) eight thousand personnel. If concurrent major range events, then there could be (1) twenty surface combatant ships; (2) six submarines; (3) two hundred aircraft; and (4) sixteen thousand personnel.

Vessel Description

The main types of surface ships and submarines that participate in major exercises are listed in Table 1, along with their length and the associated active sonar systems they employ, where applicable. Typical ships that participate in major exercises. Vessel speeds vary greatly based on their mission objective. However, as a very general rule, normal transit speed is between 12-15 knots, while during Anti-Submarine Warfare operations, vessels transit between 2-3 knots.

Table 1. The main types of surface ships and submarines that participate in major exercises.

Vessel	Length	Associated active sonar system
Aircraft carrier	1000 ft/300 m	None
Cruiser	550 ft/170 m	AN/SQS 53
Destroyer	500 ft/150 m	AN/SQS 53
Frigate	400 ft/120 m	AN/SQS 56
Submarine	360 ft/110 m	AN/BQQ-10

Acoustic Devices Used in COMPTUEX/JTFEX

Sonar

Tactical military sonars are designed to search for, detect, localize, classify, and track submarines. The Navy plans to employ two types of sonar systems during Composite Training Unit and Joint Task Force Training Exercises, both passive and active. Passive sonars only listen to incoming sounds and, since they do not emit sound energy in the water, lack the potential to acoustically affect the environment. In contrast, active sonar generates and emits acoustic energy specifically for the purpose of obtaining information concerning a distant object from the received and processed reflected sound energy. Active sonar systems convert an electrical impulse developed by a transmitter into a sound wave. The sound wave is emitted by a transducer and sent into the water. When the sound wave reflects off a submerged or surface object, the ensuing echo is picked up by the passive component of the transducer, and converted back into an electric signal. This signal is amplified by a receiver and sent to an on-board display. Since the speed of sound in water is constant (approximately 4800 feet per second), the time lapse between the transmitted signal and the received echo can be measured and the distance to the object determined. Active sonar systems emit omnidirectional and narrow beamwidth signals that can be utilized to calculate the direction and distance of a target. More advanced sonar systems transmit multiple preformed beams, listening to echoes from several directions simultaneously and providing efficient detection of both direction and range.

Active Sonar Devices

The types of sound sources that would be used in Composite Training Unit and Joint Task Force Training Exercises are described below. Only those sources marked with an asterisk (*) were included in the modeling exercise, conducted by the Navy (see Section on Active Sonar).

Sonar systems associated with surface ships. A variety of surface ships participate in Composite Training Unit or Joint Task Force Exercises, including guided missile cruisers (CG), destroyers (DD), guided missile destroyers (DDG), and frigates (FFG). Some ships (*e.g.*, aircraft carriers) do not have any onboard active sonar systems, other than fathometers. Others, like guided missile cruisers, are equipped with active as well as passive sonars for submarine detection and tracking. Surface ships use two types of active sonar, the AN/SQS-53 series sonar and the AN/SQS-56 series sonar.

The AN/SQS-53 series sonar is the most advanced surface ship anti-submarine warfare sonar in the Navy's inventory. The AN/SQS-53C series sonar has retained the transducer assembly from either the AN/SQS-53A or 53B, but provides greater range and detection capability. The AN/SQS-53C sonar is a computer-controlled surface ship sonar that has both active and passive operating capabilities, providing precise information for locating submarine contacts. The AN/SQS-53C sonar is designed to perform direct path anti-submarine warfare search, detection, localization, and tracking from a hull-mounted transducer array. This sonar system is equipped with high source level, fully stabilized beams, and wide convergence zone annuli coupled with computer-aided detection and automatic contact manage-

ment. The AN/SQS-53C sonar typically operates with a source level of 235 dB re 1μPa, and a center frequency between 2.6 and 3.3 kilohertz (kHz) (Evans and England 2001).

The AN/SQS-56 sonar system is a modern hull-mounted sonar of the *Oliver Hazard* Perry-class ships, which features digital implementation, system control by a built-in mini computer, and an advanced display system. Computer controlled functions provide a system that is extremely flexible and easy to operate. The computer is also used to provide automated fault detection and localization with a built-in training capability. The sonar is an active/passive, preformed beam, digital sonar providing panoramic echo ranging and panoramic passive surveillance. A single operator can search, track, classify and designate multiple targets from the active system while simultaneously maintaining anti-torpedo surveillance on the passive display. The AN/SQS-56 sonar system operates at a source level of approximately 223 dB re 1μPa with center frequencies between 6.8 to 8.2 kHz (Evans and England 2001).

Both the AN/SQS-53C and the AN/SQS-56 sonar systems were modeled by the Navy in order to determine the level of exposure by listed species and subsequent impact, given the predicted activities associated with a Composite Training Unit or Joint Task Force Exercise.

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EFFECTS OF THE ACTION

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Stranding Events

A stranded marine mammal is defined as "any dead marine mammal on a beach or floating nearshore; any live cetacean on a beach or in water so shallow that it is unable to free itself and resume normal activity; any live pinniped which is unable or unwilling to leave the shore because of injury or poor heath" (Gulland *et al.* 2001; Wilkinson 1991). Marine mammals are known to strand for a variety of reasons, but the cause or causes of most stranding are largely unknown (Geraci et *al.* 1976; Eaton 1979; Odell *et al.* 1980; Best 1982). Several studies suggest that the physiology, behavior, habitat relationships, age, or condition of marine mammals may cause them to strand or might pre-dispose them the [*sic*] strand when exposed to another phenomenon. Combinations of dissimilar stressors commonly combine to kill an animal or dramatically reduce its fitness, even though one exposure without the other does not produce the same result (Chroussos 2000; Creel 2005; DeVries *et al.* 2003; Fair and Becker 2000; Foley *et al.* 2001; Moberg 2000; Relyea 2005a, 2005b; Romero 2004; Sih *et al.* 2004). For example, several studies of stranded marine mammals suggest a linkage between unusual mortality events and body burdens of toxic chemicals in the stranded animals (Kajiwara *et al.* 2002; Kuehl and Haebler 1995; Mignucci-Giannoni *et al.* 2000).

Over the past three decades, several "mass stranding" events [strandings involving two or more individuals of the same species (excluding a single cow-calf pair) and at times, individuals from different species] that have occurred over the past two decades have been associated with naval operations, seismic surveys, and other anthropogenic activities that introduce sound into the ma-

rine environment (Canary Islands, Greece, Vieques, U.S. Virgin Islands, Madeira Islands, Haro Strait, Washington State, Alaska, Hawaii, North Carolina). Although few of these events involved threatened or endangered species, we consider them in this Opinion to determine if listed cetaceans and pinnipeds are likely to strand following potential exposure to mid-frequency sonar.

To conduct our analyses, information was collected on mass stranding events (events in which two or more cetaceans stranded) that have occurred and for which reports are available, from the past 40 years. Any causal agents that have been associated with those stranding events were also identified (Table 17). Major range events undergo name changes over the years, however, the equivalent of Composite Training Unit Exercises and Joint Task Force Training Exercise have been conducted in southern California (specifically SCIRC) since 1934. Training involving sonar has been conducted since World War II and sonar systems assessed in the COMPTUEX/JTFEX EA/OEA (U.S. Navy 2006a) have been used since the 1970's (J. Marshall U.S. Navy pers. comm.). Therefore, the number and timing of stranding events in California were also examined to detect potential relationships within the conduct of the Composite Training Unit or Joint Task Force Exercises.

Global Stranding Patterns

Several sources have published lists of mass stranding events of cetaceans during attempts to identify relationships between those stranding events and military sonar (Hildebrand 2004; IWC 2005; Taylor *et al.* 2004). For example, based on a review of stranding records between 1960 and 1995, the IWC (2005) identified ten mass

stranding events of Cuvier's beaked whales that had been reported, and one mass stranding of four Baird's beaked whale (*Berardius bairdii*). The IWC concluded that, out of eight stranding events reported from the mid-1980s to the summer of 2003, seven were associated with the use of mid-frequency sonar; one of those seven was associated with the use of low-frequency sonar, and the remaining were associated with the use of seismic airguns. We identified reports of 44 mass cetacean stranding events, of which at least 7 were correlated with naval exercises that were using mid-frequency sonar.

Most of the stranding events reviewed by the IWC involved beaked whales. Reports and analyzed data show an association between the use of multiple high-energy mid-range sonars and mass strandings of beaked whales (NRC 2003). A mass stranding of Cuvier's beaked whales (*Ziphius cavirostris*) in the eastern Mediterranean Sea occurred in 1996 (Frantzis 1998), and a mass stranding of Gervais' beaked whales (*Mesoplodon europaeus*), Blainville's beaked whales (*M. densirostris*),and Cuvier's beaked whales, occurred off the coast of the Canary Islands in the late 1980s (Simmonds and Lopez-Jurado 1991). Other strandings of beaked whales have also occurred in the Bahamas and Canary Islands (which included Gervais' beaked whales, Blainville's beaked whales, and Cuvier's beaked whales; Simmonds and Lopez-Jurado 1991). The stranding events that occurred in the Canary Islands and Kyparissiakos Gulf in the late 1990s and the Bahamas in 2000, have been the most intensively-studied mass stranding events and have been associated with naval maneuvers that were using sonar. The IWC investigations did not evaluate

information associated with the stranding of Cuvier's beaked whales, around Japan (IWC Scientific Committee 2005).

In our review of 70 reports of mass stranding events between 1960 and 2006, 48 (68%) involved beaked whales, 3 (4%) involved dolphins, and 14 (20%) involved whale species. Cuvier's beaked whales were involved in the greatest number of these events (41; Brownell *et al.* 2004; Taylor *et al.* 2004), followed by sperm whales (7), and Blainville and Gervais' beaked whales (4 each). Some of these recent mass stranding were concurrent with naval maneuvers and the use of active sonar (Jepson *et al.* 2003; Frantzis 1998). Naval activities that might have involved tactical sonars are reported to have coincided with 9 (13%) or 10 (14%) of those stranding events.

In 1998, the North Atlantic Treaty Organization (NATO) Supreme Allied Commander, Atlantic Center Undersea Research Centre that conducted the sonar tests, convened panels to review the data associated with the maneuvers in 1996 and beaked whale stranding events in the Mediterranean Sea. The report of these panels presented more detailed acoustic data than were available for beaked whales stranded in the Canary Islands (SACLANTCEN 1998). The NATO sonar transmitted two simultaneous signals lasting four seconds and repeating once every minute. The simultaneous signals each were broadcast at source levels of just under 230 dB re 1 μPa at 1 m. One of the signals covered a frequency range from 450-700 Hz and the other one covered 2.8-3.3 kHz. The *Ziphius* strandings in the Kyparissiakos Gulf occurred during the first two sonar

Table 17. Information on stranding events that have been correlated with or implicated sonar

Incident	Type of Sonar				Species Groups				
	LFA	Other LF Source	MF Sonar	HF Sonar	Fish	Sea Turtle	Baleen Whale	Toothed Whale	Beaked Whale
Canary Islands – 1980s (3)									
Present	no	no	yes		?	?	?	?	yes
Stranding event?									yes
Canary Islands – 1991									
Present	no	yes	yes		?	?	?	?	yes
Stranding event?									yes
Mediterranean – 1996									
Present	no	yes	yes		?	?	?	?	yes
Stranding event?									yes
Bahamas-2000									
Present	no	no	yes	?	?	?	yes	yes	yes
Stranding event?							yes	yes	yes
Madeira Islands-2000									
Present	unk*	unk*	unk*		?	?	?	?	yes
Stranding event?									yes
California – 2002									
Present	no	airgun	no		?	?	?	?	yes
Stranding event?									yes
Puget Sound – 2003									
Present?	no	no	yes	?	?	?	?	yes	no
Stranding event?								yes	no
Hanalei Bay - 2004									
Present?	no	no	yes	?	?	?	?	?	yes
Stranding event?					?	?	no	no	yes
North Carolina – 2005									
Present?	no	no	yes						
Stranding event?				?	?	?	yes	yes	no

*NATO naval exercises involving multiple ships, but sonar activity information has not been provided (Cox *et al.* 2006)

runs on each day of 12 and 13 May 1996. The close timing between the onset of sonar transmissions and the first stranding events suggests closer synchrony between the onset of the transmissions and the stranding events than was presented in Frantzis (1998). However, the Bioacoustics Panel convened by NATO was unable to reach a definitive conclusion due to the lack of evidence of direct physical injury because no viable tissue samples suitable for laboratory analysis were recovered from any of the animals. Their official finding was "An acoustic link can neither be clearly established nor eliminated as a direct or indirect cause for the May 1996 strandings."

The Navy's LFA has gained a high profile recently, due to environmental interest in its global operation. Concern about potential causal relationships between low-frequency sonar and marine mammal stranding resurfaced after a beaked whale stranding in the Bahamas in 2000. Fox *et al.* (2001) ruled out natural sound sources as a possible cause of the stranding, which pointed to an anthropogenic source. In 2001, the Joint Interim Report, Bahamas Marine Mammal Stranding Event of 14-16 March 2000 (U.S. Department of Commerce and Secretary of the Navy 2001) exonerated the low-frequency sonar but concluded that "tactical mid-range frequency sonars onboard Navy ships that were in use during the sonar exercise in question were the most plausible source of this acoustic or impulse trauma." The report also went on to conclude, "the cause of this stranding event was the confluence of Navy tactical mid-range frequency sonar and the contributory factors acting together." The contributory factors identified included "a complex acoustic environment that included the pres-

ence of a strong surface duct, unusual underwater bathymetry, intensive use of multiple sonar over an extended period of time, a constricted channel with limited access, and the presence of beaked whales that appear to be sensitive to the frequencies produced by these sonars."

Several unusual stranding events have also occurred in Chinese waters in 2004 during a period when large-scale naval exercises were taking place in nearby waters south of Taiwan (IWC 2005). Between 24 February and 10 March 2004, several short-finned pilot whales (*Globicephala macrorhynchus*), a ginkgo-toothed beaked whale (*Mesoplodon ginkgodens*), and a striped dolphin (*Stenella coeruleoalba*), were reported to have stranded. The stranding events were unusual (with respect to the species involved) compared to previous stranding records since 1994 for the region. Gross examination of the only available carcass, the ginkgo-toothed beaked whale, revealed many unusual injuries to structures that are associated with, or related to, acoustics or diving. The injuries, the freshness of the carcass, its discovery location and the coincidence of the event with a military exercise, suggest that this beaked whale died from acoustic or blast trauma that may have been caused by exposure to naval activities south of Taiwan. Taiwanese newspapers reported that live ammunition was used during these exercises. At the same time, natural phenomena that might cause whales to strand, such as earthquakes and underwater volcanoes, have not been ruled out in these cases.

On 3–4 July 2004, between 150 and 200 melon-headed whales (*Peponocephala electra*) occupied the shallow waters of Hanalei Bay (Bay), Kaua'i, Hawai'i for over 28 hours. The usually pelagic animals milled in the shallow

confined bay and were returned to deeper water with human assistance. The whales were observed animals [*sic*] entering the Bay in a single wave formation on July 3, 2004 and were observed moving back into shore from the mouth of the Bay shortly thereafter. On the next morning, the animals were herded out of the Bay with the help of members of the community, the Hanalei Canoe Club, local and Federal employees, and volunteers/staff with the Hawaiian Islands Stranding Response Group and were out of visual sight later that morning. One whale, a calf, was known to have died following this event (on 5 July 2004). The animal was noted alive and alone in the Bay on the afternoon of 4 July 2004 and was found dead in the Bay the morning of 5 July 2004. A full necropsy was performed on the calf to determine the manner and cause of death. Although cause of death could not be definitively determined, it is likely that maternal separation, poor nutritional condition, and dehydration contributed to the whale's death.

Environmental factors, abiotic and biotic, were analyzed for any anomalous occurrences that would have contributed to the animals entering and remaining in Hanalei Bay. The bathymetry in the Bay is similar to many other sites within the Hawaiian Island chain and dissimilar to that which has been associated with mass strandings in other parts of the U.S. The weather conditions appeared to be normal for the time of year with no fronts or other significant features noted. There was no evidence for unusual distribution or occurrence of predator or prey species or unusual harmful algal blooms. Weather patterns and bathymetry that have been associated with mass strandings elsewhere were not found to occur in this instance.

This event was spatially and temporally correlated with 2004 Undersea Warfare Exercises. Official sonar training and tracking exercises in the Pacific Missile Range Facility warning area did not commence until about 0800 hrs (local time) on 3 July and were ruled out as a possible trigger for the initial movement into Hanalei Bay. However, the six naval surface vessels transiting to the operational area on 2 July had been intermittently transmitting active mid-frequency sonar [for ~9 hours total] as they approached from the south. After ruling out other phenomena that might have caused this stranding, NMFS concluded that the active sonar transmissions associated with the 2004 Undersea Warfare Exercises were a plausible contributing causal factor in what may have been a confluence of events. Other factors that may have contributed to the stranding event include the presence of nearby deep water, multiple vessels transiting in a directed manner while transmitting active sonar over a sustained period, the presence of surface sound ducting conditions, or intermittent and random human interactions while the animals were in the Bay.

In January 2005, three offshore species of cetaceans (33 short-finned pilot whales, *Globicephala macrorhynchus*, one minke whale, *Balaenoptera acutorostrata*, and two dwarf sperm whales, *Kogia sima*) stranded alive on the beaches of North Carolina. In a report by Hohn *et al.* (2006) information provided to NMFS by the Navy, indicated routine tactical mid-frequency sonar operations from individual surface vessels over relatively short durations and small spatial scales within the area and time period investigated. No marine mammals were detected by marine mammal observers on operational vessels;

standard operating procedure for surface naval vessels operating mid-frequency sonar is the use of trained visual lookouts using high-powered binoculars. Given that this event was the only stranding of offshore species to occur within a 2-3 day period in the region on record (*i.e.*, a very rare event), and given the occurrence of the event simultaneously in time and space with a naval exercise using active sonar, the association between the naval sonar activity and the location and timing of the event could be a causal rather than a coincidental relationship. However, evidence supporting a definitive association is lacking, and, in particular, there are differences in operational/environmental characteristics between this event and previous events where sonar has apparently played a role in marine mammal strandings. This does not preclude behavioral avoidance of sound exposures.

Several authors have noted similarities between some of these stranding incidents: they occurred in islands or archipelagoes with deep water nearby, several appeared to have been associated with acoustic waveguides like surface ducting, and the sound fields created by ships transmitting mid-frequency sonar (Cox *et al.* 2006; D'Spain *et al.* 2006). Although Cuvier's beaked whales have been the most common species involved in these stranding events (81% of the total number of stranded animals), other beaked whales (including *Mesoplodon europeaus*, *M. densirostris*, and *Hyperoodon ampullatus*) comprise 14% of the total. Other species including odontocetes and mysticetes (*Stenella coeruleoalba*, *Kogia breviceps* and *Balaenoptera acutorostrata*) have stranded, but in much lower numbers and less consistently than beaked whales. It is not clear whether (a)

Ziphius cavirostris is more prone to injury from high-intensity sound than other species, (b) its behavioral response to sound makes it more likely to strand, or (c) it is substantially more abundant than the other affected species at the times and places of exposure. Because the association between the various sonars and stranding marine mammals is not consistent (some marine mammals strand without being exposed to sonar and some sonar transmissions are not associated with marine mammal strandings despite their co-occurrence), other risk factors or a groupings of risk factors probably contribute to these strandings. Based on the number of strandings, particularly for beaked whales, Barlow and Gisner (2006) discussed the effectiveness of current monitoring and mitigation practices and described promising new tools for improving monitoring and mitigation in the near future.

California Stranding Patterns

While major range events undergo name changes over the years, the equivalent of Composite Training Unit Exercises and Joint Task Force Training Exercise have been conducted in Southern California, specifically SCIRC, since 1934. Sonar training activities have been conducted since World War II, and sonar systems assessed in the COMPTUEX/JTFEX EA/OEA (U.S. Navy 2006a) have been used since the 1970's (J. Marshall U.S. Navy, pers. comm.). Between 1982-2005, 8 blue whales, 14 fin whales, 7 humpback whales, 2 sperm whales, 0 sei whales, and 12 Guadalupe fur seals (California Marine Mammal Stranding Network Database 2006), were reported as stranded in California. Known strandings also occurred in all months with no significant temporal trend (California Marine Mammal Stranding Network

Database 2006). Beaked whales have also stranded in Southern California, however they were not considered mass stranding events nor were they correlated with sonar. Eleven beaked whales stranded between 1982-2005 from San Diego to Santa Barbara County [specifically, Blainville's, Hubb's *(M. carhubbsi)*,Cuvier's, and Stejneger's (M. *stejnegeri*)] (California Marine Mammal Stranding Network Database 2006). Until recently, however, there has been no correlation between the number of known stranding events worldwide and activities like those conducted as part of Composite Training Unit or Joint Task Force Exercises.

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Probable Responses of Endangered Whales to Mid-Frequency Sonar

Based on the evidence available, the mid-frequency sonars associated with the ASW operations that are proposed for the Composite Training Unit or Joint Task Force Exercises are not likely to kill or injure threatened or endangered marine mammals. However, little is known about the effect of short-term disruptions of a marine mammal's normal behavior (Richardson *et al.* 1995). Most of the evidence available suggests that most sources of disturbance do not directly kill or injure marine mammals. The evidence available also does not lead us to expect threatened or endangered cetaceans and pinnipeds to strand or suffer resonance effects from the mid-frequency sonars associated with the ASW operations that will be included in Composite Training Unit or Joint Task Force Exercises.

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INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibits the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by NMFS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

On January 23, 2007, the Navy received a two year exemption from the prohibitions contained in the Marine Mammal Protection Act of 1972, pursuant to the National Defense Authorization Act of 2004 (Public Law 108-136); therefore, the exemptions that section 7(o)(2) of the Endangered Species Act of 1973, as amended, provide to that Act's prohibitions, apply.

The measures described below are non-discretionary and must be implemented by the Navy in order for the exemption in section 7(o)(2) to apply. If the Navy fails to implement and adhere to the terms and conditions of this Incidental Take Statement, the protective coverage of section 7(o)(2) may lapse.

Amount or Extent of Take Anticipated

The effects analyses contained in this Opinion concluded that individual blue whales, fin whales, humpback whales, sperm whales, and sei whales may be exposed to and are likely to respond to, mid-frequency sonar associated with the proposed Composite Training Unit or Joint Task Force Exercises.

This Opinion concluded that although blue, fin, and sei whales may be exposed to the received levels of mid-frequency active sonar, they are not likely to physiologically respond if they are exposed to mid-frequency active sonar in the 1 to 10 kHz range. This Opinion also concluded that humpback and sperm whales and Guadalupe fur seals are likely to be exposed to and likely to respond to, acoustic exposure in ways that constitute "harassment" for the purposes of the ESA. The closer these whales are to active sonar and the greater the number of times they are exposed to active sonar (using the Navy's estimates of the cumulative exposures to accumulated sound exposure greater than 173 dB as an index of potential exposures), the greater their likelihood of be exposed to and responding to, that active sonar exposure. Based on our analysis, NMFS does not expect any threatened or endangered species to be injured or killed as a result of exposure to the proposed Composite Training Unit or Joint Task Force Exercises (refer to the *Effects of the Action* section of this Opinion for further discussion).

For the purposes of this Opinion and Incidental Take Statement, we assumed that the Navy's estimated of the number of times whales might be exposed to mid-frequency sonar associated with anti-submarine warfare

exercises and accumulate energy equivalents greater than 173 dB represent the number of times a whale might be "taken" in the form of harassment (see Table ? [sic] for these estimates, by species). We do not anticipate any of these whale species to die or exhibit responses that might constitute harm or injury.

Effect of the Take

In the accompanying Biological Opinion, NMFS determined that this level of anticipated take is not likely to result in jeopardy to the species. The proposed action would not likely result in destruction or adverse modification of critical habitat. Although the biological significance of the animal's behavioral responses to sonar remains unknown, exposure to sonar transmissions are likely to disrupt one or more behavioral patterns that are essential to an individual animal's life history or to the animal's contribution to a population. For the proposed action, behavioral responses that result from sonar transmissions and any associated disruptions are expected to be temporary and is not likely to affect the reproduction, survival, or recovery of these species.

[Chart Omitted]

Reasonable and Prudent Measures

The National Marine Fisheries Service (NMFS) believes the following reasonable and prudent measures are necessary and appropriate to minimize the impacts of incidental take on threatened and endangered species:

1. The U.S. Navy shall implement measures to reduce the probability of exposing blue whales, fin whales, humpback whales, sei whales, sperm whales, and Guadalupe fur seals to mid-frequency sonar trans-

missions that will occur during each of the different Composite Training Unit or Joint Task Force Exercises conducted between February 2007 and January 2009.

2. The U.S. Navy shall implement a monitoring program that allows the U.S. Navy and NMFS to evaluate the assumptions contained in this Biological Opinion and that underlie this incidental take statement.

3. The U.S. Navy shall submit a report that evaluates its mitigation measures and reports the results of its monitoring program.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Endangered Species Act of 1973, as amended, the U.S. Navy must comply with the following terms and conditions, which implement the reasonable and prudent measures described above and outline reporting and monitoring requirements, as required by the section 7 regulations (50 CFR 402.14(i))

1. The U.S. Navy shall implement measures to reduce the probability of exposing blue whales, fin whales, humpback whales, sei whales, sperm whales, and Guadalupe fur seals to mid-frequency sonar transmissions that will occur during each of the different Composite Training Unit or Joint Task Force Exercises conducted between February 2007 and January 2009.

2. If the U.S. Navy cannot avoid exposing blue whales, fin whales, humpback whales, sei whales, sperm whales, and Guadalupe fur seals, to mid-frequency

sonar transmissions that will occur during each of the different Composite Training Unit or Joint Task Force Exercises conducted between February 2007 and January 2008, the U.S. Navy shall develop and implement measures that reduce the probability of exposing blue whales, fin whales, humpback whales, sei whales, sperm whales, and Guadalupe fur seals to midfrequency sonar transmissions at received levels that would be expected to elicit behavioral or other responses that are assumed to be adverse to these marine mammal species.

3. By March 31, 2007, the U.S. Navy shall develop a monitoring program whose study design provides to them an estimate of:

   a. the number of blue whales, fin whales, humpback whales, sei whales, sperm whales, and Guadalupe fur seals, that are exposed to mid-frequency sonar at received levels equal to or greater than 173 dB re 1 $\mu Pa^2.s$ during any of the 14 Composite Training Unit or Joint Task Force Exercises conducted between February 2007 and January 2009;

   b. the behavioral or other observable responses of any of these whales that are exposed to mid-frequency sonar at these received levels;

   c. the effectiveness of the Navy's entire suite of mitigation measures at avoiding exposing any of these whales to mid-frequency sonar; and

   d. the effectiveness of the different measures contained in the Navy's suite of mitigation measures at avoiding exposing any of these whales to mid-frequency sonar.

4. Within 15 calendar days of completing an exercise, the U.S. Navy shall provide the Chief, Endangered Species Division, Office of Protected Resources, with a verbal briefing that summarizes the starting and ending dates of the exercise, initial counts of the number of the different marine mammal species that were observed within 2,000 yards of a vessel that had been transmitting mid-frequency active sonar, and the initial estimated distance between those marine mammals and the transmitting vessel.

5. Within 120 calendar days of completing an exercise the U.S. Navy shall provide the Chief, Endangered Species Division, Office of Protected Resources (with a copy provided to the Assistant Regional Administrator for Protected Resources in NMFS' Southwest Regional Office) with a written report that shall include the following information:

   a. a summary of the exercise (the starting and ending date of the exercise, the number of ships and aircraft involved in the exercise, and the number of hours passive and active sonar was used during the exercise);

   b. the specific mitigation measures the Navy implemented during the exercise;

   c. the number of blue whales, fin whales, humpback whales, sei whales, sperm whales, and Guadalupe fur seals that (i) had been detected within 200 yards of a sonobuoy and 500 and 1,000 yards of a sonar dome or during an active transmission and (ii) the estimate of the number of blue whales, fin whales, humpback whales, sei whales, sperm whales, and Guadalupe fur seals that had been

exposed to mid-frequency sonar at received levels equal to or greater than 173 dB re 1 $\mu Pa^2.s$;

d. the reports of the activity or activities that blue whales, fin whales, humpback whales, sei whales, sperm whales, and Guadalupe fur seals had been observed to exhibit while they were within 200 yards of a sonobuoy and 500 and 1,000 yards of a sonar dome that was actively transmitting during the exercise (for example, the report should not identify "playing;" it should identify the behavior that allowed the observer to conclude that the animal(s) was "playing").

Reports of observations shall identify the date, time, and visual conditions associated (if the observation is produced from a helicopter, the report should identify the speed, vector, and altitude of the airship; the sea state, and lighting conditions) with the observation; and how long an observer or set of observers maintained visual contact with a marine mammal;

e. an evaluation of the effectiveness of those mitigation measures at avoiding exposing endangered whales to ship traffic and endangered whales and pinnipeds to mid-frequency sonar. This evaluation shall identify the specific observations that support any conclusion the U.S. Navy reaches about the effectiveness of the mitigation measures;

f. an evaluation of the monitoring program's ability to detect marine mammals that occur within 200 yards of a sonobuoy and 500 and 1,000 yards of a sonar dome, during an active transmission (or

close enough to an exercise to be exposed to mid-frequency sonar at received levels equal to or greater than 173 dB re 1 μPa^2.s) with the specific evidence that supports any conclusions the U.S. Navy reaches.

6. The Navy shall continue to coordinate with NMFS on stranded marine mammal events during U.S. Navy operations in southern California with NMFS' Southwest Regional Office to facilitate communication during Composite Training Unit or Joint Task Force Exercises. The Navy will report to the NMFS Stranding Coordinator any observed unusual marine mammal behavior, including stranded, live or dead marine mammal strandings, and dead floating marine mammals, that may occur at any time during or shortly after Composite Training Unit or Joint Task Force Exercises activities.

7. The Navy shall continue to use standard reporting procedures for any collisions with marine mammals to the NMFS Stranding Coordinator including: species identification (photos), location, vessel speed, vessel direction, post-collision marine mammal behavior, when feasible.

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COMPOSITE TRAINING UNIT EXERCISES AND JOINT TASK FORCE EXERCISES ENVIRONMENTAL ASSESSMENT/OVERSEAS ENVIRONMENTAL ASSESSMENT FINAL

FOR

Commander, U.S. Pacific Fleet
Commander, THIRD Fleet

February 2007

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EXECUTIVE SUMMARY

INTRODUCTION

This Environmental Assessment/Overseas Environmental Assessment (EA/OEA) has been prepared by the Department of the Navy (Navy) in compliance with the *National Environmental Policy Act* (NEPA) of 1969 (42 U.S. Code [U.S.C] § 4321 *et seq.*); the Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of NEPA* (Title 40 Code of Federal Regulations [C.F.R.] §§ 1500-1508); Department of the Navy Procedures for Implementing NEPA (32 C.F.R. 775); and Executive Order 12114 (EO 12114), *Environmental Effects Abroad of Major Federal Actions*. The NEPA process ensures that environmental impacts of proposed major Federal actions are considered in the decision-making process. EO 12114 requires environmental consideration (*e.g.*, preparation of an OEA) for actions that may significantly harm the environment of the global commons. This EA/OEA satisfies the requirements of both NEPA and EO 12114.

BACKGROUND

The training mission of Commander, U.S. Pacific Fleet (COMPACFLT) is to provide fully trained U.S. combat ready forces to Combatant Commanders, as dictated by the National Command Authority. In furtherance of this mandate and in support of the Navy's *Fleet Readiness Training Plan* (FRTP) the U.S. THIRD Fleet (headquartered at Naval Base Point Loma) regularly conducts Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Exercises (JTFEX) at military installations and operating areas in the southwestern United States and offshore of Southern Califor-

nia. These complex, deployment-preparation exercises require varied land, sea, and undersea training environments to properly demonstrate the full range of capabilities required of deploying naval forces.

U. S. Navy ships are normally assigned to and deploy as a package or formation called a Strike Group. Strike Groups are further divided by function into a Carrier Strike Group (CSG) or Expeditionary Strike Group (ESG). A CSG is normally formed around an Aircraft Carrier (CVN) with an embarked Air Wing (CVW). A CSG is frequently supported by three to five other types of ships aimed at power projection, and gaining and maintaining sea control. An ESG is formed around an Amphibious Assault Ship (LHA or LHD) with an embarked Marine Expeditionary Unit (MEU). An ESG is also normally supported by three to five other types of ships. An ESG and CSG have certain similar capabilities. However, an ESG is unique in its ability to move embarked MEU elements ashore via helicopter or amphibious-type craft. Thus an ESG will often train to different, expanded warfare capabilities from the sea to land areas.

The FRTP is a "stair step" training process that is divided into three, increasingly complex Phases: Basic, Integrated and Sustainment.

COMPTUEX is in the *Integrated Phase* of the FRTP and may involve either a CSG or an ESG. A COMPTUEX is conducted as a series of scheduled training events that occur according to a given time schedule against an opposition force. The COMPTUEX provides an opportunity for the Strike Group to become proficient in the myriad of required warfare skill sets. Additionally, it stresses the integration or coordination of the

different warfare areas and provides realistic training on in-theater operations. The COMPTUEX is normally more structured than the JTFEX, so it is longer in duration.

JTFEX is in the *Sustainment* or *Final Phase* of the FRTP and may involve either a CSG or an ESG. It is a scenario-driven, at-sea training exercise designed to evaluate the Strike Group's preparedness for forward deployed contingency and combat operations. JTFEX also utilizes a simulated (mock) opposition force and serves as the venue for U.S. THIRD Fleet to assess the readiness, interoperability, and proficiency of naval forces in realistic, free-play scenarios, ranging from military operations other-than-war to armed conflict. As the final certification event of the FRTP, the Strike Group must demonstrate the ability to operate and integrate into a Joint Operations Area under simulated austere, hostile conditions.

PURPOSE AND NEED

The purpose of conducting a COMPTUEX and JTFEX is to provide final certification of readiness prior to forward-deploying forces to Combatant Commanders. The exercise incorporates a multi-dimensional, multi-threat environment that stresses all aspects of joint maritime operations.

The need for COMPTUEX and JTFEX major range exercises is derived from the Congressional mandate to organize, train, and equip the military Services (10 U.S.C. 5032). The JTFEX is the certification curriculum the Navy uses to meet its responsibility for deploying CSGs and ESGs. The COMPTUEX and JTFEX are needed both to train and evaluate the units and staffs,

and to provide an opportunity to evaluate their readiness. The COMPTUEX and JTFEX provide a threefold evaluation process. First, the Strike Group Commander, the Commander's staff, and the Commander's component commanders practice essential skills to examine and prioritize every potential threat, balance competing demands of specific warfare commanders, and apportion limited assets to counter threats and decisively prevail in combat. Second, the Strike Group Commanders and their staffs are evaluated by THIRD Fleet on their ability to accurately analyze and assess the tactical situation, assimilate new information, plan and develop courses of tactical action, and effectively conduct military operations. Third, Strike Group Commanders are evaluated on overall mission accomplishment, interoperability, response to emergent tasking, and force protection. At the conclusion of the COMPTUEX and JTFEX, Commander, THIRD Fleet certifies to Commander, Pacific Fleet the readiness of the CSG or ESG to deploy, fulfilling the Navy's Title 10 responsibilities.

COMPTUEX/JTFEX ACTIVITIES AND LOCATIONS

The analysis in this Environmental Assessment (EA)/ Overseas Environmental Assessment (OEA) focuses on four offshore and nearshore ranges within the Southern California (SOCAL) Range Complex (Warning Area 291 [W-291], SCIRC, NB Coronado, and offshore MCB Camp Pendleton) and the southern portion of the offshore area within the Point Mugu Sea Range. For purposes of analysis in the EA/OEA, these four offshore and near shore training areas within the SOCAL Range Complex are referred to as the SOCAL Operating Area (SOCAL OPAREA). Bases and ranges used only for

support activities and certain special warfare training events were omitted from further consideration because these are considered routine support activities (*e.g.*, take off/landing from an existing airfield), so are not within the operational scope of the EA/OEA.

* * * * *

SUMMARY OF FINDINGS

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The analysis in this EA/OEA concludes that COMPTUEX/JTFEX activities would result in no significant impacts. Supporting details follow:

- No significant impacts in accordance with NEPA would occur in any of the resource categories evaluated.
- No significant harm to resources in the global commons would occur under the EO 12114 analysis.
- No effect on historic properties would occur. Consistent with 36 CFR 800.4(a)(1) and 800.2(o), the U.S. Navy has determined that COMPTUEX/JTFEX does not constitute an undertaking in the sense that no new activities are planned.
- The EA/OEA analyzes potential effects to species listed under the Endangered Species Act (ESA). In accordance with ESA requirements, the Navy completed consultation under Section 7 of the ESA with the National Marine Fisheries Service (NMFS) on the potential that COMPTUEX/JTFEX activities may affect listed species in the action area. In concluding the Section 7 consultation, NMFS issued a Biological Opinion (BO)

(February 9, 2007) finding that conduct of the JTFEX and COMPTUEX may affect but is not likely to adversely affect the white abalone (*Haliotis sorenseni*), four sea turtle species (loggerhead [*Caretta caretta*], leatherback [*Dermochelys coriacea*], eastern Pacific green [*Chelonia agassizi*], and olive ridley [*Lepidochelys olivacea*]), listed fish (Chinook salmon [*Oncorhynchus tshawytscha*], steelhead [*Oncorhynchus mykiss*], and green sturgeon [*Acipenser medirostris*]), the North Pacific right whale (*Eubalaena japonica*)[1], the Southern Resident killer whale (*Orcinus orca*), or the Stellar sea lion (*Eumetopias jubatus*). The opinion further concludes that conduct of these exercises will not likely result in fitness consequences for the blue whale (*Balaenoptera musculus*) and is not likely to jeopardize the continued existence of the fin whale (*Balaenoptera physalus*), the sei whale (*Balaenoptera borealis*), the humpback whale (*Megaptera novaeangliae*), the sperm whale (*Physeter macrocephalus*) or the Guadalupe fur seal (*Arctocephalus townsendi*). In addition, NMFS issued the Navy an incidental take statement requiring terms and conditions to be implemented in order to be exempt from the prohibitions of Section 9 of the ESA. In accordance with these terms and conditions the Navy will implement "measures to reduce the probability of ex-

[1] On December 27, 2006, NMFS completed a status review of the northern right whale concluding that right whales in the northern hemisphere exist as two species: North Pacific right whale (*Eubalaena japonica*) and North Atlantic right whale (*E. glacialis*). This document uses *E. japonica* throughout.

posing" any endangered mammals, implement a monitoring program in association with COMPTUEX/JTFEX to evaluate assumptions contained in the Biological Opinion, and to provide NMFS with reports (verbal and written) regarding the observed marine mammals during the exercises. Land-based activities will be conducted in accordance with existing biological opinions. Based on receipt of the BO, the Navy concludes that no significant impacts to Federally-listed species will occur as a result of COMPTUEX/JTFEX.

- No adverse effects on the annual rates of recruitment or survival of any marine mammal species and stocks, including strategic or depleted stocks, are expected as a result of the estimated incidents of Level B harassment and limited incidents of potential Level A harassment that may occur incidental to the action. In addition, the mitigation measures for acoustic and non-acoustic effects presented in Chapter 5 result in the action having the least practicable adverse impact on marine mammal species or stocks. Compliance with the Marine Mammal Protection Act (MMPA) for mid-frequency active sonar is satisfied due to the issuance on January 23, 2007, of a *National Defense Exemption (NDE) from the Requirements of the MMPA for Certain DoD Military Readiness Activities That Employ Mid-Frequency Active Sonar or Improved Extended Echo Ranging Sonobuoys.* Incidental harassment of marine mammals associated with underwater detonations is not reasonably foreseeable; therefore no MMPA authorization for these events or other COMPTUEX/JTFEX activities is required.

- In accordance with Magnuson-Stevens Fishery Conservation and Management Act, COMPTUEX/JTFEX events do not adversely affect Essential Fish Habitat.
- The U.S. Navy has determined that implementation of the No Action Alternative or Proposed Action would be consistent to the maximum extent practicable with the enforceable policies of the approved California Coastal Management Program.

CHAPTER 1
PURPOSE AND NEED FOR PROPOSED ACTION

1.1 INTRODUCTION

The training mission of Commander, U.S. Pacific Fleet (COMPACFLT) is to provide fully-trained U.S. combat ready forces to the Combatant Commanders as dictated by the National Command Authority. In furtherance of this mandate, the U.S. Navy's THIRD Fleet conducts Composite Training Unit Exercises (COMPTUEXs) and Joint Task Force Exercises (JTFEXs) on a recurring basis at military installations and operation areas in the southwest United States and offshore of Southern California (Figure 1.2-1). These exercises are large, deployment-level exercises, requiring vast and varied land, sea, and undersea training environments necessary to exercise the full range of capabilities required of deploying naval forces. The THIRD Fleet is proposing to conduct seven Composite Training Unit Exercises (COMPTUEX) and seven Joint Task Force Exercises (JTFEX) from February 2007 through January 2009. The major ranges and facilities to be utilized include:

U.S. Navy

- Southern California Operating Areas (SOCAL OPAREAs) (including Warning Area W-291)
- San Clemente Island Range Complex (SCIRC)
- Naval Base (NB) Coronado, CA
- Point Mugu Sea Range (PMSR) (including Warning Area W-289), NB Ventura County, CA.
- China Lake Range, Naval Air Weapons Station (NAWS) China Lake, CA
- Fallon Range Training Complex (FRTC), Naval Air Station (NAS) Fallon, NV

U.S. Marine Corps

- Marine Corps Base (MCB) Camp Pendleton, CA
- Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, CA
- Marine Corps Air Station (MCAS) Miramar, CA
- Bob Stump Training Range Complex (BSTRC) (including Chocolate Mountain Aerial Gunnery Range), CA and AZ

U.S. Air Force

- Nevada Test and Training Range (NTTR), Nellis Air Force Base (AFB), NV
- Vandenberg AFB, CA

U.S. Army

- National Training Center (NTC), Fort Irwin, CA

This Environmental Assessment (EA)/Overseas EA (OEA) evaluates potential environmental impacts of seven COMPTUEXs and seven JTFEXs proposed to be conducted during the period February 2007 through January 2009, assuming that each exercise will maximize the employment of operational and training assets consistent with exercise objectives and scenarios. This EA/OEA analyzes the offshore and nearshore activities occurring during COMPTUEX/JTFEX. Other activities occurring on land-based areas described above are conducted in accordance with the existing environmental documentation presented in Chapter 2, Table 2.1-1.

This EA/OEA has been prepared by the Department of the Navy (Navy) in compliance with the *National Environmental Policy Act* (NEPA) of 1969 (42 U.S. Code [U.S.C] § 4321 *et seq.*); the Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of NEPA* (Title 40 Code of Federal

Regulations [C.F.R.] §§ 1500-1508); Department of the Navy Procedures for Implementing NEPA (32 C.F.R. 775); and Executive Order 12114 (EO 12114), *Environmental Effects Abroad of Major Federal Actions*. The NEPA process ensures that environmental impacts of proposed major Federal actions are considered in the decision-making process. EO 12114 requires environmental consideration (*e.g.*, preparation of an OEA) for actions that may significantly harm the environment of the global commons. This EA/OEA satisfies the requirements of both NEPA and EO 12114.

1.2 BACKGROUND

For over 70 years, the Navy has conducted critical readiness training operations in the Southern California Operating Area (SOCAL OPAREA). Sustaining an integrated network of air, land and undersea ranges, SOCAL OPAREA supports the largest concentration of naval forces in the world. SOCAL OPAREA uniquely supports training requirements in all warfare areas. In fact, there is no other range complex on the West Coast where a preponderance of military units can simultaneously train in Electronic Warfare (EW), Anti-Submarine Warfare (ASW), Mine Warfare (MIW), Command and Control Warfare (C2W), Air Warfare (AW), Surface Warfare (SUW), Strike Warfare (STW), Amphibious Warfare (AMW), Naval Special Warfare (NSW), and accomplish Fleet Carrier Landing Practice without having to deploy from their home station. SOCAL's unique land and undersea geographic features, close proximity to existing naval bases, and diverse range capabilities, possess elements necessary for effective, integrated training for air, land, sea, and undersea warfare.

Historically, major range exercises in the SOCAL OPAREA date back to before World War II. With the transfer in 1934 of San Clemente Island (SCI) from the Department of Commerce to the Department of the Navy, U.S Fleet Landing Exercises consisting of heavy naval gunfire, air strikes and Battalion-sized amphibious landings occurred in Southern California. In 1937, U.S. Fleet Landing Exercise No. 3 consisting of 4700 Navy, Army and Marine Corps forces implemented a coordinated mission to "capture" San Clemente Island.

As part of this Fleet Landing Exercise, the mission included providing protection against attack by 'enemy' submarines. Active sonar systems used during major range activities in SOCAL were tested in SOCAL OPAREA and used effectively against German U-boats during World War II.

During the Cold War, sonar technological developments introduced into naval Fleet training were critical for tracking more sophisticated Soviet submarines. Since the 1970's, advances in signal processing have greatly enhanced the ability to detect targets. However, output from active sonar systems used in SOCAL OPAREA and throughout the Navy has remained largely the same for the past 30 years.

Current Naval Fleet Training Strategy

Today the Navy's Fleet Training Strategy governs the conduct of training necessary to attain required readiness levels by deploying naval forces, with specific focus on the operational requirements of overseas theaters of operations. In order to ensure the availability of naval forces to meet the operational requirements, the Navy developed its Fleet Response Plan (FRP) in May 2003.

The goal of the FRP is to ensure the deployment availability of six Carrier Strike Groups (CSGs) at all times, and the surge capability to deploy two additional CSGs on very short notice. The FRP articulates the Fleet Response Training Plan (FRTP) to provide a pre-deployment training framework for operational units. The FRTP establishes a framework for training CSGs and Expeditionary Strike Groups (ESGs). This framework involves a three-phase training continuum. The first phase includes basic training events. The COMPTUEX is conducted in the intermediate phase, while the JTFEX is conducted by the CSG or ESG as the capstone event in the advanced phase of the pre-deployment training cycle.

The FRTP identifies the following readiness certification levels:

- **Emergency Surge Ready** - This status is for individual units or groups that have completed minimum training requirements and possess the unit/group level proficiency to be mission capable. This status normally is attained upon completion of basic phase training.

- **Surge Ready** - This status is achieved when units or groups have attained the level of readiness (80% of currently available metrics), and have accomplished integrated strike group training. This status typically is attained during integrated phase training (to include COMPTUEX). The Status of Resources and Training System (SORTS) communicates the readiness and capability levels that are defined in qualitative terms and derived through quantitative criteria. This level indicates the unit possesses the resources

and has accomplished the training necessary to undertake the bulk of the wartime mission.

- **Routine Deployable** - This status is achieved when units or groups are "surge ready" and complete specified advanced training, to include JTFEX. This status normally is attained upon completion of integrated phase training.
- **Sustainment** - This status is attained for units or groups that have previously been designated Routine Deployable. If the time lapse between being designated Routine Deployable and actual deployment is significant, units will undergo sustainment training which is designed to maintain their war-fighting skills and Routine Deployable levels.

Every ship, submarine, and deployable aircraft squadron in the Navy is part of this 27-month FRTP training continuum. Fleet training in the FRTP is essentially in three phases—unit-level, integrated, and sustainment; these can be equated to basic, intermediate, and advanced training levels. The typical FRTP timeline is depicted in Figure 1.2-1.

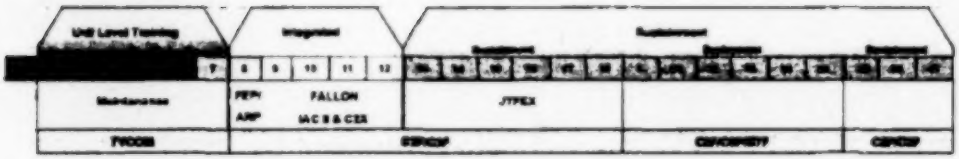

Figure 1.2.-1. The Fleet Readiness Training Plan

Notes: TYCOM = Type Command (*e.g.*, Naval Air Forces Pacific); FEP = Final Evaluation Problem for surface ships; ARP = Advanced Readiness Program for aviation squadrons; Fallon refers to Air Wing Integrated training at the Strike Warfare Center; C2X = COMPTUEX = Composite Training Unit Exercise; C2F and C3F are the training numbered Fleets; and C5F, C6F and C7F are Navy components of Unified Commands.

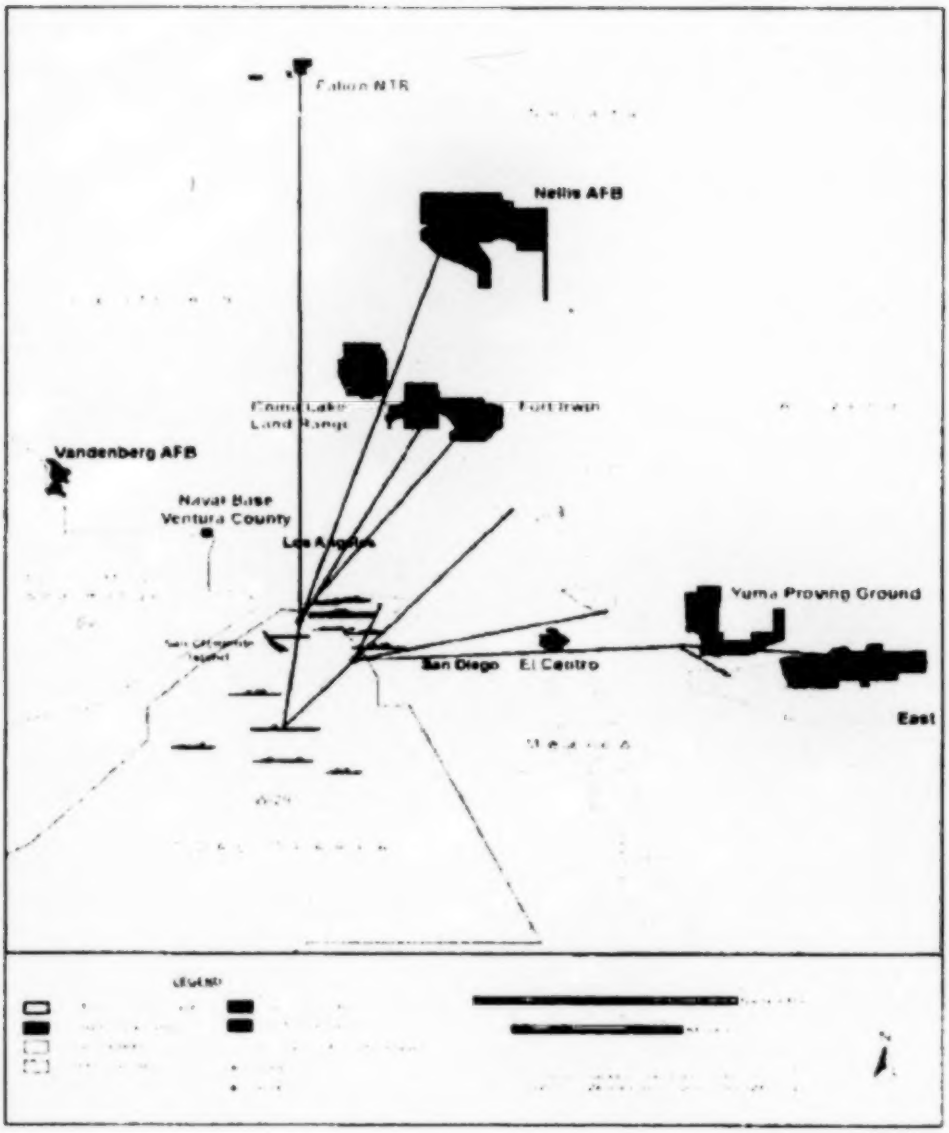

Figure 1.2-2. Training Ranges and Operating Areas for COMPTUEX/JTFEX Training

1.3 Proposed Action

The EA studies two alternatives, they are: (1) the No Action Alternative (Current Operations); and, (2) the Proposed Action (Preferred Alternative). The No Action Alternative consists of the individual operations at existing major ranges and facilities associated with COMPTUEX and JTFEX events. Under this alternative, Commander, THIRD Fleet, would continue to conduct training operations from February 2007 through January 2009. These operations would include three ESG COMPTUEXs, four CSG COMPTUEXs, three ESG JTFEXs and four CSG JTFEXs for a total of fourteen exercises in 2 years in the Southwestern United States and Southern California (SOCAL) Operating Areas (OPAREAS).

Under the Proposed Action, Commander, THIRD Fleet would have the option to conduct two concurrent major range events. While the overall number of major range events depicted in the No Action Alternative, to include fourteen exercises, would not increase, Commander, THIRD Fleet would have the flexibility to assess two Strike Groups simultaneously, thereby supporting the Fleet Response Plan. The ability to conduct concurrent major range events provides the operational commander with these readiness goals: (1) flexibility to respond to surge requirements; (2) unique opportunity for carrier operations; and, (3) enhanced operational capabilities.

1.4 Overview of COMPTUEX and JTFEX

The training mission of COMPACFLT is to provide fully trained combat-ready forces to Combatant Commanders, as dictated by the National Command Authority. In furtherance of this mandate and in support of the

Navy's FRTP the U.S. THIRD Fleet (headquartered at Naval Base Point Loma) regularly conducts COMPTUEX and JTFEX at military installations and operating areas in the southwestern United States and offshore of Southern California. These complex, deployment-preparation exercises require varied land, sea, and undersea training environments to properly demonstrate the full range of capabilities required of deploying naval forces.

U. S. Navy ships are normally assigned to and deploy as a package or formation called a Strike Group. Strike Groups are further divided by function into a CSG or ESG. A CSG is normally formed around an Aircraft Carrier (CVN) with an embarked Air Wing (CVW). A CSG is frequently supported by three to five other types of ships aimed at power projection, and gaining and maintaining sea control. An ESG is formed around an Amphibious Assault Ship (LHA or LHD) with an embarked Marine Expeditionary Unit (MEU). An ESG is also normally supported by three to five other types of ships. An ESG and CSG have certain similar capabilities. However, an ESG is unique in its ability to move embarked MEU elements ashore via helicopter or amphibious-type craft. Thus an ESG will often train to different, expanded warfare capabilities from the sea to land areas.

The FRTP is a "stair step" training process that is divided into three, increasingly complex Phases: Basic, Integrated and Sustainment.

COMPTUEX is in the *Integrated Phase* of the FRTP and may involve either a CSG or an ESG. A COMPTUEX is conducted as a series of scheduled training events that occur according to a given time schedule

against an opposition force. The COMPTUEX provides an opportunity for the Strike Group to become proficient in the myriad of required warfare skill sets. Additionally, it stresses the integration or coordination of the different warfare areas and provides realistic training on in-theater operations. The COMPTUEX is normally more structured than the JTFEX, so it is longer in duration.

JTFEX is in the *Sustainment* or *final Phase* of the FRTP and may involve either a CSG or an ESG. It is a scenario-driven, at-sea training exercise designed to evaluate the Strike Group's preparedness for forward deployed contingency and combat operations. JTFEX also utilizes a simulated opposition force and serves as the venue for U.S. THIRD Fleet to assess the readiness, interoperability, and proficiency of naval forces in realistic, free-play scenarios, ranging from military operations other-than-war to armed conflict. As the final certification event of the FRTP, the Strike Group must demonstrate the ability to operate and integrate into a Joint Operations Area under simulated austere, hostile conditions.

1.5 Purpose and Need

The purpose of conducting a COMPTUEX and JTFEX is to provide final certification of readiness prior to forward-deploying forces to Combatant Commanders. The exercise incorporates a multi-dimensional, multi-threat environment that stresses all aspects of joint maritime operations.

The need for COMPTUEX and JTFEX major range exercises is derived from the Congressional mandate to organize, train, and equip the military Services (10

U.S.C. 5032). The JTFEX is the certification curriculum the Navy uses to meet its responsibility for deploying CSGs and ESGs. The COMPTUEX and JTFEX are needed both to train and evaluate the units and staffs, and to provide an opportunity to evaluate their readiness. The COMPTUEX and JTFEX provide a threefold evaluation process. First, the Strike Group Commander, the Commander's staff, and the Commander's component commanders practice essential skills to examine and prioritize every potential threat, balance competing demands of specific warfare commanders, and apportion limited assets to counter threats and decisively prevail in combat. Second, the Strike Group Commanders and their staffs are evaluated by THIRD Fleet on their ability to accurately analyze and assess the tactical situation, assimilate new information, plan and develop courses of tactical action, and effectively conduct military operations. Third, Strike Group Commanders are evaluated on overall mission accomplishment, interoperability, response to emergent tasking, and force protection. At the conclusion of the COMPTUEX and JTFEX, Commander, THIRD Fleet certifies to Commander, Pacific Fleet the readiness of the CSG or ESG to deploy, fulfilling the Navy's Title 10 responsibilities.

The COMPTUEX/JTFEX activities need to occur in the SOCAL OPAREA, as this area is uniquely situated to support all warfare certification requirements associated with COMPTUEX and JTFEX. For example, the only deepwater, instrumented range in the eastern Pacific is located just west of San Clemente Island. In addition, the SOCAL OPAREA is the only location where Naval Surface Fire Support, Military Operations Specialist spotter training, artillery landings, full-mission

Sea, Air, Land (SEAL) teams, Close Air Support (CAS), and Long-range Air Strikes can occur as an integrated, coordinated series of activities during JTFEX.

1.6 Scope and Content of the EA/OEA

As defined in the CEQ regulations, an environmental assessment is a concise public document that briefly provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI). In this case, an EA/OEA is being prepared as part of an ongoing planning process intended to optimize THIRD Fleet COMPTUEX and JTFEX training capability and to anticipate changes in training requirements or demand. This EA/OEA assesses the environmental effects of ongoing training at current operations levels and capacity using existing training assets (the No Action Alternative). The findings of this EA/OEA will allow Navy decision-makers and other interested parties to compare the environmental effects of the proposed surge COMPTUEX and JTFEX training to the effects of taking no action (maintaining status quo training).

Military installations and ranges used only for support activities and certain special warfare training events associated with COMPTUEX and JTFEX training have been omitted from further consideration in this EA/OEA because these activities do not present a potential to impact the environment due to the routine nature of these activities. Ongoing activities on certain installations and ranges are addressed in environmental documents as described below. Based on the availability of improved science and quantitative methodologies to assess effects on marine resources, COMPTUEX and JTFEX training components carried forward for analy-

sis are those in the offshore marine environment and on established ranges in the nearshore environment (see Figure 1.2-1). In addition, certain onshore activities are presented and their analyses are summarized and incorporated by reference. The period of operations will be February 2007 through January 2009.

1.7 Related Environmental Documents

Preparation of this EA/OEA will rely on an extensive body of previous NEPA analysis pertaining to the actions and facilities used for COMPTUEX and JTFEX training. Many COMPTUEX and JTFEX training events are conducted on ranges that have existing NEPA documentation which cover the activities that are undertaken during these exercises (as well as other activities on those ranges). Previous documentation relevant to this EA/OEA will be incorporated by reference in accordance with CEQ regulations (40 C.F.R. 1502.21). Table 2.1-1 in Chapter 2 provides a list of documents incorporated by reference within this EA/OEA. In addition, where specific environmental documentation was used for the analyses, those documents are referenced in that discussion.

1.8 Public Comment

The environmental issues analyzed in this EA/OEA have been the subject of public involvement for similar Navy training activities. The Navy considered the scope and content of prior public comments to shape the environmental impacts analysis as well as issues identified and studied within in this EA/OEA:

- The marine mammal mid-frequency active sonar acoustic effect methodology incorporates an approach developed in coordination with the Na-

tional Marine Fisheries Service (NMFS) for the proposed Undersea Warfare Training Range (USWTR) Draft Environmental Impact Statement/Draft Overseas Environmental Impact Statement (U.S. Navy, 2005). Based on public comment and additional comment from NMFS received in response to the USWTR DEIS, the methodology for assessing potential non-physiological behavioral effect to marine mammals was substantially revised and described in the EA/OEA and the MMPA Incidental Harassment Authorization (IHA) for the Navy's 2006 Rim of the Pacific exercise. (U.S. Navy, 2006, NMFS, 2006).

- A robust description of all aspects of the training exercises, including the use of ordnance for certain training events, is provided in this EA/OEA in response to public comments received on the RIMPAC EA/OEA. In addition, a more detailed analysis of pinnipeds is appropriate here based on the marine resources present in the Southern California offshore environs.

- In consideration of public comments raised, in particular during USWTR, a detailed analysis of the potential acoustic effects to fish is analyzed in this EA/OEA. During the USWTR public comment process, extensive public comments were received regarding potential fisheries effects and a substantial portion of these comments related to range access issues. USWTR is a proposed instrumented range; in contrast, the instrumented ranges in the southern California range complex have been in existence for decades, and the range maintains a public website and other public infor-

mation processes to facilitate coordinated range access and use for fishing boats and other range non-military uses. The public comments received during USWTR validated a range public information approach such as that already in place for the Navy's offshore instrumented ranges in southern California.

- Review of public comments associated with RIMPAC 2006 indicates that much of the public comment and controversy was due to a stranding event investigated by the NMFS for potential causal connection to a prior RIMPAC exercise in the same geographic area. No such controversial event exists in the history of major exercises in the Southern California Operating Areas and environs analyzed in this EA/OEA. The types and intensity of training exercises analyzed here have been ongoing in these geographic areas for decades with no indication of adverse effect to marine mammals, fisheries, coastal resources, sanctuary resources, water quality or other resources. The operational tempo assessed in this EA/OEA is consistent with past use, and additionally considers a preferred alternative that allows for the conduct of two major exercises concurrently.
- Underlying the majority of formal public comments on USWTR and RIMPAC is intensive interest in the sufficiency of the Navy's mitigation measures to provide for protection and stewardship of marine resources during Navy training activities. Based on the fundamental importance of protective and mitigative measures, this action includes an extensive set of mitigation measures

related both to underwater detonations and mid-frequency active sonar. The mitigations for mid-frequency active sonar were already in use by Navy and were further developed in a coordinated process with National Marine Fisheries Service (NMFS). This extended suite of mitigation measures are responsive to public comment while ensuring military readiness, and will be implemented as part of this proposed action, and are detailed in Chapter 5 of this EA/OEA.

- In addition, as a component of the proposed action, the Navy initiated a Federal consistency process under the Coastal Zone Management Act (CZMA) with the California Coastal Commission (CCC). The documentation and analyses considered throughout the CZMA process are provided in Appendix O. The coastal consistency determination process, by law, requires public comment and involvement. In this case, much of the public comment received related to activities for which a consistency determination concurrence was not requested (see Appendix O and Chapter 4). However, the Navy's participation in two public hearings and review of public comments considered by the CCC shaped the coastal effects analyses and the review of the mitigation measures developed cooperatively with NMFS and included as part of this Proposed Action.

Finally, the Navy will use its internal procedures and regulations to ensure that the public has notice of the FONSI/FONSH and an opportunity to request a copy of the final EA/OEA.

CHAPTER 2

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 COMPTUEX AND JTFEX TRAINING AREAS

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2.1.1 Description of the Proposal

The Proposed Action will take place on existing military test and training ranges, installations and bases located in Arizona, California and Nevada and in southern California offshore areas. These locations include the Southern California Operating Areas (including W-291), San Clemente Island Range Complex, Point Mugu Sea Range (including W-289), Naval Base Coronado, Marine Corps Base Camp Pendleton, China Lake Range, Fallon Training Range Complex, Bob Stump Training Range Complex, Nevada Test and Training Range, National Training Center, Marine Corps Air Ground Combat Center Twentynine Palms, Marine Corps Air Station Miramar, and Vandenberg Air Force Base.

The purpose to conduct a COMPUTEX [*sic*] is to integrate the aircraft carrier and its air wing into a cohesive team, and to shape the deploying personnel and assigned ships, submarines, and aircraft, by realistic training, into effective warfare teams. These warfare teams are then trained for proficiency in strike, air warfare, undersea warfare, surface warfare, command and control, and coordinated air support. The purpose of conducting a JTFEX is to provide final certification of readiness prior to deploying forces to Combat Commanders. This exercise, which incorporates a multi-dimensional, multi-threat environment that stresses all

aspects of naval operations, fulfills the need to ensure responsibilities under Title 10, United States Code 5032, where the Navy is required by law to organize, train and equip this military service. The Navy uses JTFEX/COMPTUEX to meet that statutory responsibility by training units and staffs, and evaluating, as well as certifying readiness.

The EA studies two alternatives, they are: (1) the No Action Alternative (Current Operations); and, (2) the Proposed Action (Preferred Alternative). The No Action Alternative consists of the individual operations at existing major ranges and facilities associated with COMPTUEX and JTFEX events. Under this alternative, Commander, THIRD Fleet, would continue to conduct training operations from February 2007 through January 2009. These operations would include three ESG COMPTUEXs, four CSG COMPTUEXs, three ESG JTFEXs and four CSG JTFEXs for a total of fourteen exercises in 2 years in the Southwestern United States and Southern California (SOCAL) Operating Areas (OPAREAS).

Under the Proposed Action, Commander, THIRD Fleet would have the option to conduct two concurrent major range events. While the overall number of major range events depicted in the No Action Alternative, to include fourteen exercises, would not increase, Commander, THIRD Fleet would have the flexibility to assess two Strike Groups simultaneously, thereby supporting the Fleet Response Plan. The ability to conduct concurrent major range events provides the operational commander with these readiness goals: (1) flexibility to respond to surge requirements; (2) unique opportunity for carrier operations; and, (3) enhanced operational capabilities.

2.1.2 Offshore and Nearshore Ranges

Warning Area 291 (W-291), San Clemente Island Range Complex (SCIRC), Naval Base Coronado (NB Coronado), and the Camp Pendleton Amphibious Vehicle Training Area (CPAVA) and Camp Pendleton Amphibious Assault Training Area (CPAAA) offshore of Marine Corps Base Camp Pendleton (Camp Pendleton) are all located within the SOCAL OPAREA. The SOCAL OPAREA and PMSR have been categorized as consisting of or including offshore and nearshore training areas, ranges, and special use airspace (SUA). At-sea operating areas include waters subject to U.S. jurisdiction and seaward.

2.1.2.1 *Warning Area 291*

W-291 is located along the coast and in the waters adjacent to Southern California from Santa Barbara to Baja California. W-291 parallels the coast to the south of Los Angeles for a distance of approximately 288 nm (533 kilometer [km]) and extends seaward for up to 800 nm (1,482 km).

2.1.2.2 *San Clemente Island Range Complex*

San Clemente Island (SCI) is the southernmost of the eight California Channel Islands. It is located 55 nm (102 km) south of Long Beach and 68 nm (126 km) west of San Diego, California. The island is approximately 18 nm (33 km) long and 4 nm (7 km) across at its widest point. SCIRC includes Southern California Offshore Range (SCORE) and the Southern California Anti-Submarine Warfare Range (SOAR). More than 60 range and operational areas covering approximately 2,620 mi^2 (6,786 km^2) are clustered within a 40-mile (64-kilometer) radius of the island. These areas stretch from the ocean

floor to an altitude of 80,000 ft (24,000 m).

2.1.2.3 *Naval Base Coronado*

NB Coronado is located in San Diego and Los Angeles counties in Southern California and encompasses 42,573 ac (17,228 ha) of land and water. NB Coronado is comprised of the following geographically separate installations:

- Naval Air Station North Island (NASNI)
- Naval Amphibious Base Coronado (NAB Coronado)
- Naval Auxiliary Landing Field (NALF), San Clemente Island
- Outlying Landing Field (OLF) Imperial Beach
- Silver Strand Training Complex (SSTC)
- Survival, Evasion, Resistance, and Escape (SERE) Training Facility, Warner Springs
- Mountain Warfare Training Facility (MWTF), La Posta

2.1.2.4 *Marine Corps Base Camp Pendleton - Offshore*

Camp Pendleton is located approximately 38 mi (61 km) north of San Diego and occupies more than 125,000 ac (50,586 ha) of varied terrain. The waters adjacent to Camp Pendleton are known as the Camp Pendleton Amphibious Assault Area (CPAAA) and contain 294 mi^2 (762 km^2) of ocean area. The CPAAA includes areas dedicated to Landing Craft Air Cushion (LCAC) training and operations and the Camp Pendleton Amphibious Vehicle Area (CPAVA). Less than 10 mi (16 km) of coastline is normally available for training. Camp

Pendleton has several developed areas that are isolated from each other by relatively large areas of mostly undeveloped land used for training and maneuvers.

2.1.2.5 *Point Mugu Sea Range*

The PMSR parallels the California coastline for about 230 nm (426 km) and extends seaward for more than 200 nm (370 km). It includes San Nicolas Island and range support facilities at NB Ventura County (including NAS Point Mugu and Construction Battalion Center [CBC] Port Hueneme), Laguna Peak, Santa Cruz Island, San Miguel Island, and Santa Rosa Island. PMSR is a 36,000 mi^2 (93,240 km^2) instrumented range. For purposes of this EA/OEA, the area of analysis for PMSR is an area along the southern boundary of the PMSR.

2.1.3 Onshore Ranges

MCB Camp Pendleton, China Lake Range, Fallon Range Training Complex (FRTC), Marine Corps Air Ground Combat Center (MCAGCC), Marine Corps Air Station (MCAS) Miramar, Bob Stump Training Range Complex (BSTRC), Nevada Test and Training Range (NTTR), Vandenberg Air Force Base (AFB), and National Training Center (NTC), Fort Irwin have been categorized as onshore ranges. COMPTUEX/JTFEX training activities that occur on onshore ranges have been previously addressed in existing National Environmental Policy Act (NEPA) compliance documents, provided in the discussion of each range.

2.2 COMPTUEX AND JTFEX OVERVIEW AND TRAINING COMPONENTS

Carrier Strike Groups (CSGs) and Expeditionary Strike Groups (ESGs) conduct COMPTUEX and JTFEX train-

ing events. A description of CSG and ESG components is provided below.

Carrier Strike Groups—Carrier strike groups are the core of the Navy's war-fighting strength. Typically a carrier strike group normally consists of:

- **Carrier**—The carrier provides a wide range of options to the U.S. government from simply showing the flag to attacks on airborne, afloat and ashore targets. Because carriers operate in international waters, its aircraft do not need to secure landing rights on foreign soil. These ships also engage in sustained operations in support of other forces.
- **Guided missile cruiser**—multi-mission surface combatant. Equipped with Tomahawks for long-range strike capability.
- **Two guided missile destroyers**—multi-mission surface combatants, used primarily for anti-air warfare (AAW).
- **Attack submarine**—in a direct support role seeking out and destroying hostile surface ships and submarines.
- **Combined ammunition, oiler, and supply ship**—provides logistic support enabling the Navy's forward presence: on station, ready to respond.

The CSG could be employed in a variety of roles, all of which would involve the gaining and maintenance of sea control:

- Protection of economic and/or military shipping.
- Protection of a Marine amphibious force while enroute to, and upon arrival in, an amphibious

objective area.

- Establishing a naval presence in support of national interests.

The Expeditionary Strike Group (ESG) centers on the flexibility and readiness of a combined expeditionary unit and an amphibious readiness group (ARG). The total ESG provides operational freedom and expanded warfare capabilities, not only by land with embarked Marines, but at sea, as well. The make-up of an Expeditionary Strike generally consists of:

- **Amphibious Assault Ship (LHA or LHD)**—Primary landing ships, resembling small aircraft carriers, designed to put troops on hostile shores. In a secondary role, using AV-8B Harrier aircraft and anti-submarine warfare helicopters, these ships perform sea control and limited power projection missions.
- **Amphibious Transport Dock (LPD) Ship**—Warships that embark, transport, and land elements of a landing force for a variety of expeditionary warfare missions.
- **Dock Landing Ship (LSD)**—Dock Landing Ships support amphibious operations including landings via LCAC, conventional landing craft and helicopters, onto hostile shores. The three classes of LSDs are the Harpers Ferry class, Whidbey Island class, and Anchorage class.
- **Guided Missile Cruiser**—multi-mission surface combatant. Equipped with Tomahawks for long-range strike capability.
- **Guided Missile Destroyer**—multi-mission surface combatant, used primarily for AAW.

- **Frigate**—primarily for anti-submarine warfare (ASW).
- **Attack Submarine**—in a direct support role seeking out and destroying hostile surface ships and submarines.

2.2.1 COMPTUEX/JTFEX Vessels, Aircraft, and Personnel

U.S. Navy ships are assigned to and deploy as a package or formation called a Strike Group. Strike Groups are further divided by function into a Carrier Strike Group (CSG) or an Expeditionary Strike Group (ESG). Participants typically include up to:

- Ten (10) surface combatant ships
- Three (3) submarines
- One hundred (100) aircraft
- Eight thousand (8,000) personnel

The vessels, aircraft, and personnel that may participate in a COMPTUEX or JTFEX event are not limited to those permanently stationed at bases within the Navy's Southwest Region.

2.2.2 COMPTUEX and JTFEX Exercise Events

Forty-five different types of training events are associated with COMPTUEXs and JTFEXs. Although a majority of these training events are common to both exercises, some training events are unique to either one or the other. Representative COMPTUEX and JTFEX events, listed in Table 2.2-1, are grouped by the primary environment that they occur in, such as at-sea, air, and

ground operations. A few of the events are listed as a combination, since they occur in multiple environments. A summary of these training events is provided below.

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2.4 DEVELOPMENT OF ALTERNATIVES

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2.4.3 Alternatives Eliminated From Further Consideration

Alternatives considered during preparation of the EA/OEA included the use of alternate locations for conducting the exercises, reducing the number of exercises conducted during the year, and exercise simulation.

2.4.3.1 Alternative COMPTUEX/JTFEX Training Locations

COMPTUEX/JTFEX training occurs at-sea and at various military training range locations throughout California, Arizona and Nevada. The unique nature of the interplay between the SOCAL Range Complex assets, result in support for COMPTUEX/JTFEX at this particular location.

There is no other series of integrated ranges that afford this level of operational support and comprehensive integration for THIRD Fleet major exercises. By use of the SOCAL Range Complex assets, component commanders practice essential skills to examine and prioritize every potential threat, plan and develop tactical courses of action and effectively conduct military operations. There is no duplicative location where land, sea, undersea and airspace assets are controlled by military authorities that allow full play and training by THIRD

Fleet operational actors. This location and its supporting operational environments allow readiness training to be conducted to properly build skills required for deploying naval forces. For this reason, alternative sites do not meet the purpose and need of the proposal, and therefore were eliminated from further study and analysis.

Although THIRD Fleet has, in rare instances, conducted COMPTUEXs and JTFEXs at alternate locations including Alaska and Hawaii, these exercises were designed to meet one-time operational requirements. The Southwestern U.S. and SOCAL Operating Areas serve as the primary training area for the majority of THIRD Fleet COMPTUEX and JTFEX participants. Using these training areas, which are nearby major home port installations, significantly reduces costs associated with:

- Personnel time away from home. COMPTUEXs and JTFEXs conducted in Hawaii and Alaska can add up to 2 weeks (transit time) to the length of an exercise.
- Logistics lead-time. COMPTUEXs and JTFEXs conducted in remote locations require assets to be staged for the exercise, thereby reducing the already limited time available for equipment repair and maintenance activities.
- Aircraft/ship/equipment "wear and tear" and fuel. Maintenance and fuel costs are directly related to the amount of travel time to and from training locations.

In addition to the increased costs associated with using remote COMPTUEX and JTFEX locations such as

Alaska and Hawaii, none of the remote training areas provide the full complement of range infrastructure necessary to conduct typical, realistic, coordinated COMPTUEX and JTFEX training. For instance, the Alaskan operations area does not have a military range or installation capable of supporting amphibious landings. Moreover, an underwater tracking range that can support ASW and MCM training does not exist. The Hawaiian operations area does not provide a variety of air-to-ground ranges located within aircraft STRIKE distance. The lack of multiple STRIKE ranges reduces the exercise planners' ability to adjust mission scenarios should an intended exercise range/target become unusable due to weather, fire, or in the case of other unforeseen circumstances.

The factors listed above limit the viability of THIRD Fleet conducting its typical JTFEXs and COMPTUEXs at alternate locations. Although, specific one-time mission requirements may dictate the use of remote COMPTUEX and JTFEX training locations in the future, the routine usage of these training areas for the major exercises is infeasible and will not be evaluated further in this document.

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2.4.3.3 Computer Simulation Training

Training simulation technologies provide excellent tools for implementing a successful, integrated training program while reducing the risk and expense typically associated with military training. This alternative would involve using computer simulation to the exclusion of live training to train CSGs and ESGs during a COMPTUEX and JTFEX. The Navy and Marine Corps currently use training simulation extensively and COMP-

TUEXs/JTFEXs make substantial use of virtual and constructive simulation training tools. However, while it is an essential component of current training techniques, simulation cannot substitute for the high stress, dynamic environment (such as personnel experience under combat conditions) that would be encountered during an actual contingency situation and replicated as nearly as possible during a live COMPTUEX and JTFEX. Consequently, this alternative fails to meet the Purpose and Need as discussed in Section 1.3, and therefore, is not considered feasible and is not evaluated further in this EA/OEA.

CHAPTER 3
AFFECTED ENVIRONMENT

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3.3 BIOLOGICAL RESOURCES

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3.3.2 Ocean Areas (Southern California Operating Area)

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3.3.2.5 *Marine Mammals*

Marine mammals addressed within this EA/OEA include members of two orders: Cetacean, which includes whales, dolphins, and porpoises; and Carnivora, which includes true seals (family Phocidae), sea lions (family Otariidae), and sea otters (a member of the Mustelidae family). Cetaceans spend their lives entirely at sea. Pinnipeds (seals and sea lions) hunt and feed exclusively in the ocean, and some of the species occurring in the areas addressed in this EA/OEA come ashore to rest, mate, and bear young. Although most mustelids (a family which includes otters, weasels, skunks, and wolverines) are terrestrial, sea otters primarily swim, feed, and sleep in the ocean and rarely haul-out on shore to rest.

3.3.2.5.1 Cetaceans

A total of 31 species of cetaceans could be encountered in the SOCAL OPAREA area (Table 3.3-2). They include 23 species of toothed whales (odontocetes) and eight species of baleen whales (mysticetes). At least ten species generally can be found in the SOCAL OPAREA area in moderate or high numbers either year-round or during annual migrations into or through the area: gray

whale (*Eschrichtius robustus*), pygmy sperm whale (*Kogia breviceps*), bottlenose dolphin (*Tursiops truncatus*), pantropical spotted dolphin (*Stenella attenuata*), striped dolphin (*Stenella coeruleoalba*), short-beaked common dolphin (*Delphinus delphis*), Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), Risso's dolphin (*Grampus griseus*), northern right whale dolphin (*Lissodelphis borealis*), and Dall's porpoise (*Phocoenoides dalli*). Other species are represented by either small numbers, moderate numbers during part of the year, occasional sightings, or strandings. Not included in the 23 species are species considered to be extralimital in the SOCAL OPAREA area. Details of the species found in the area and their abundance, distribution, and density estimates are given in Appendix A.

Six species of cetaceans occurring in the SOCAL OPAREA are listed as endangered. Most endangered baleen whales that occur in California waters were once commercially hunted to the point that their populations were severely depleted. The humpback whale (*Megaptera novaeangliae*), blue whale (*Balaenoptera musculus*), fin whale (*B. physalus*), sei whale (*B. borealis*), and the North Pacific right whale (*Eubalaena glacialis*) are currently listed as endangered species and protected by the ESA. Gray whales were removed from the endangered list in 1994 because of an increase in population numbers (Carretta et al., 2005). The one toothed whale that is listed as endangered is the sperm whale (*Physeter macrocephalus*).

Stocks of all species listed as endangered under the ESA are automatically considered 'depleted' and 'strategic' under the MMPA. The specific definition of a stra-

tegic stock is complex, but in general it is a stock for which human activities may be having a deleterious effect on the population and may not be sustainable. The stocks of blue, fin, sei, and humpback whales occurring off California are considered strategic (Barlow et al., 1997). In addition, the California/Oregon/Washington Stock of the short-finned pilot whale (*Globicephala macrorhynchus*) and sperm whale (*Physeter macrocephalus*) have been designated as strategic. The killer whale is not listed under the ESA, but the Eastern North Pacific Southern Resident Stock, members of which may occur off California, is considered depleted and a strategic stock. The stocks of minke whales and mesoplodont beaked whales off the coast of California/Oregon/Washir gton have been reclassified as non-strategic (Barlow et al., 1998; Caretta et al., 2005). All marine mammals are protected by the MMPA.

Overall, a comparison of cetacean abundance in 1979/80 *vs.* 1991 indicated that numbers of mysticetes and odontocetes have increased in offshore California waters over the 12-year period. However, this is not so for the harbor porpoise (*Phocoena phocoena*) and the short-finned pilot whale, which appear to have decreased in numbers (Barlow, 1994 and 1995; Forney et al., 1995 and 2000). Also, the increased abundance of blue whales reported previously in the Channel Islands and elsewhere off southern California (*e.g.*, Calambokidis et al., 1990; Barlow, 1994 and 1995) was not confirmed by certain long-term vessel-based surveys (Larkman and Veit, 1998). The status of cetacean stocks and their abundance estimates for California are summarized in Table 3.3-2 from Marine Mammal Stock Assessments prepared by Barlow et al. (1997), Forney et al. (2000), and Carretta et al. (2001 and 2004).

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3.3.2.6 Species Accounts

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3.3.2.6.2 Odontocete Cetaceans (Dolphins and Tooth Whales)

Baird's Beaked Whale (*Berardius bairdii*)

Status—Baird's beaked whale is not listed as endangered under the ESA, and the California/Oregon/ Washington Stock is not considered strategic under the MMPA. The minimum population estimate for the California/Oregon/Washington Stock is 152 (CV=0.51) individuals (Carretta et al., 2005).

Distribution—Baird's beaked whales appear to occur mainly in deep waters over the continental slope, oceanic seamounts, and areas with submarine escarpments (Ohsumi, 1983; Kasuya and Ohsumi, 1984; Willis and Baird, 1998; Kasuya, 2002). They may be seen close to shore where deep water approaches the coast (Jefferson et al., 1993) and in shallow waters in the central Okhotsk Sea (Kasuya, 2002).

Baird's beaked whales are infrequently encountered along the continental slope and throughout deep waters of the eastern North Pacific (Forney et al., 1994; Barlow et al., 1997). No sightings were made during the 1998-1999 NMFS surveys of the SCIRC (Carretta et al., 2000). All Baird's beaked whales found in the SOCAL Range Complex are expected to be found in non-territorial waters. There are few sightings of Baird's beaked whales in the SOCAL OPAREA, sightings occurred in both the cold and warm seasons (U.S. Navy, 1998).

Acoustics—MacLeod (1999) suggested that beaked whales use frequencies of between 300 Hz and 129 kHz for echolocation, and between 2 and 10 kHz, and possibly up to 16 kHz, for social communication. Both whistles and clicks have been recorded from Baird's beaked whales in the eastern North Pacific Ocean (Dawson et al., 1998). Whistles had fundamental frequencies between 4 and 8 kHz, with 2 to 3 strong harmonics within the recording bandwidth (Dawson et al., 1998). Pulsed sounds (clicks) had a dominant frequency around 23 kHz, with a second frequency peak around 42 kIIz (Dawson et al., 1998). The clicks were most often emitted in irregular series of very few clicks; this acoustic behavior appears unlike that of many species that do echolocate (Dawson et al., 1998).

There is no direct information available on the exact hearing abilities of beaked whales (MacLeod, 1999). Beaked whale ears are predominantly adapted to hear ultrasonic frequencies (MacLeod, 1999). Based on the anatomy of the ears of beaked whales, these species may be more sensitive than other cetaceans to low frequency sounds; however, as noted earlier, there is no direct evidence to support this idea (MacLeod, 1999).

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Cuvier's Beaked Whale (*Ziphius cavirostris*)

Status—The Cuvier's beaked whale is not listed as endangered under the ESA, and the California/Oregon/Washington Stock is not considered to be strategic under the MMPA. The minimum population estimate for the California/Oregon/Washington Stock is 1,121 (CV= 0.68) individuals (Carretta et al., 2005).

Distribution—Little is known about the habitat preferences of any beaked whale. Based on current knowledge, beaked whales normally inhabit deep ocean waters (>2,000 m) or continental slopes (200-2,000 m), and only rarely stray over the continental shelf (Pitman, 2002). Cuvier's beaked whale generally is sighted in waters >200 m deep, and is frequently recorded at depths >1,000 m (Gannier, 2000; MacLeod et al., 2004). They are commonly sighted around seamounts, escarpments, and canyons. MacLeod et al. (2004) reported that Cuvier's beaked whales occur in deeper waters than Blainville's beaked whales in the Bahamas.

The distribution and abundance of beaked whales in the SOCAL Range Complex are not well known because they are difficult to identify; many of the beaked whales that have been sighted have not been identified to species. Based on those that were identified, Cuvier's beaked whale appears to be the most abundant beaked whale in the area, representing almost 80% of the identified beaked whale sightings (Barlow and Gerrodette, 1996). It was sighted only during the cold-water season. Cuvier's beaked whales are found in the SOCAL OPAREA throughout the year.

Acoustics—Little is known of the acoustic abilities of the Cuvier's beaked whale. MacLeod (1999) suggested that beaked whales in general use frequencies of between 300 Hz and 129 kHz for echolocation, and between 2 and 10 kHz, and possibly up to 16 kHz, for social communication. Vocalizations recorded from two juvenile Hubbs' beaked whales consisted of low and high frequency click trains ranging in frequency from 300 Hz to 2000 Hz and from 300 Hz to 80 kHz and whistles with a frequency

range of 2.6 to 10.7 kHz and duration of 156 to 450 msec (Lynn and Reiss, 1992; Marten, 2000).

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Mesoplodont Beaked Whales (*Mesoplodon* spp.)

Status—Mesoplodonts are difficult to distinguish in the field. They are pelagic, spending most of their time in deep water far from shore, and dive for long periods. Five species of *Mesoplodon* may occur off the coast of southern California: Blainville's beaked whale (*M. densirostris*), Hubb's beaked whale (*M. carlhubbsi*), Perrin's beaked whale (*M. perrini*), pygmy beaked whale (*M. peruvianus*), and ginkgo-toothed beaked whale (*M. ginkgodens*) (Mead 1981). Until better methods are developed for distinguishing the different *Mesoplodon* species from one another, the management unit is defined to include all *Mesoplodon* populations. The minimum population estimate of California Oregon/Washington Stock of Mesoplodont beaked whales is 645 (CV=0.92) individuals (Carretta et al., 2005).

Distribution—Blainville's beaked whale is the *Mesoplodon* species with the widest distribution throughout the world (Mead, 1989), although it is generally limited to tropical and warmer temperate waters (Leatherwood and Reeves, 1983). Occasional occurrences in cooler higher-latitude waters are presumably related to warm-water incursions (Reeves et al., 2002). In the North Pacific Ocean, the northernmost documented occurrence of this species is a stranding off central California (Reeves et al., 2002). Seasonal movements or migrations by Blainville's beaked whales are not known to occur.

Blainville's beaked whale distribution is mainly derived from stranding data. It is mainly a pelagic species, and

like other beaked whales, is generally found in deep slope waters ~500-1000 m deep (Davis et al., 1998; Reeves et al., 2002). However, it may also occur in coastal areas, particularly where deep water gullies come close to shore. Most strandings involved single individuals, although groups of 3-7 were observed in tropical waters (Jefferson et al., 1993). Ritter and Brederlau (1999) estimated group size to range from 2-9 (mean 3.44).

Hubb's beaked whale occurs in temperate waters of the North Pacific (Mead, 1989). Most (22 of 35) of the records are from California, including two records in Santa Barbara County (Mead, 1989). The distribution of the species appears to be correlated with the deep subarctic current (Mead et al., 1982). Hubb's beaked whales are often killed in drift gillnets off California (Reeves et al., 2002).

Perrin's beaked whale was first discovered in 2002, when genetic analysis was carried out on four whales stranded between 1975 and 1979 in California, all along <80 km of beach just north of San Diego (Dalebout et al., 2002). The whales previously were identified by Mead (1981) as Hector's beaked whale (*Mesoplodon hectori*), which before then was known only from the Southern Hemisphere. A fifth Perrin's beaked whale was identified by genetic analysis of a stranded whale near Monterey in 1997 that previously had been identified as a neonate Cuvier's beaked whale. Dalebout et al. (2002) also suggested that two sightings off the coast of California in the 1970s that were tentatively identified as Hector's beaked whales were Perrin's beaked whale.

The ginkgo-toothed beaked whale is only known from stranding records (Mead, 1989). Strandings have been

reported for the western and eastern North Pacific, South Pacific, and Indian oceans, and from the Galápagos Islands (Palacios, 1996b). Two of the thirteen total records reported by Mead (1989) were from the eastern North Pacific, one from Del Mar, California, and one from Baja California. The species is hypothesized to occupy relatively cool areas in the temperate and tropical Pacific, where upwelling is known to occur, such as in the California and Peru Currents and the equatorial front (Palacios, 1996b).

The pygmy beaked whale is the smallest Mesoplodont (Reyes et al., 1991). It is hypothesized to forage in mid-to-deep waters (Urbán-Ramírez and Aurioles-Gamboa, 1992). The pygmy beaked whale is thought to occur between the latitudes 25°N and 15°S, from Baja California to Peru (Urbán-Ramírez and Aurioles-Gamboa, 1992), although Pitman and Lynn (2001) noted a stranding record for the species in Chile, at latitude 29°15'S. Carretta et al. (2005) reported that is known to occur off the U.S. west coast, and Reeves et al. (2002) reported that it is also known to occur off southern California.

There have been few sightings of *Mesoplodon* species; therefore, seasonal occurrence in the SOCAL OPAREA can not be determined.

Acoustics—MacLeod (1999) suggested that beaked whales use frequencies of between 300 Hz and 129 kHz for echolocation, and between 2 and 10 kHz, and possibly up to 16 kHz, for social communication. Vocalizations recorded from two juvenile Hubbs' beaked whales consisted of low and high frequency click trains ranging in frequency from 300 Hz to 80 kHz and whistles with a

frequency range of 2.6 to 10.7 kHz and duration of 156 to 450 msec (Lynn and Reiss, 1992; Marten, 2000).

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CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

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4.3 BIOLOGICAL RESOURCES

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4.3.1 Marine Resources

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4.3.1.7 Marine Mammals

Potential impacts to marine mammals can occur from sources that are non-acoustic (i.e. ship strikes) and acoustic with sonar and underwater explosives being the primary acoustic concern. The Navy has and is continuing to conduct extensive research on the effect of sound on marine mammals, the modeling of sound effects to marine mammals in areas of Navy operations, and methods of reducing impacts through improved detection of marine mammals and sound reduction.

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4.3.1.7.4 Potential Acoustic Effects

The Navy recognizes that the information regarding the effects of underwater sound on marine mammals, particularly the unique sources comprising mid-frequency active sonars, is incomplete. The Navy has invested and continues to invest funding in the continued research of these effects, and the analysis here is conducted consistent with the best available science. The methodology presented here is assumed to provide an over-estimate of potential for acoustic effects associated with mid-frequency sonar, an analysis preliminarily supported by the lack of observed effects during major exercise

events for which a reporting requirement was established in a prior MMPA National Defense Exemption.

Three of the activities occurring during COMPTUEX and JTFEX involve the use of mid-frequency active sonar which have the potential to affect marine mammals—these are ASW Operations, Tracking Operations, and Submarine Operations described in Chapter 2 of this document. The approach for modeling potential acoustic effects from COMPTUEX/JTFEX training activities on cetacean species makes use of the methodology that was developed in cooperation with NMFS for the Navy's Draft *Overseas Environmental Impact Statement/Environmental Impact Statement, Undersea Warfare Training Range (OEIS/EIS)* (U.S. Navy, 2005). The methodology includes the following topics and updates which are discussed in detail below:

- Regulatory Framework
- MMPA Level A and Level B Harassment
- Criteria and Thresholds for Physiological Effect
- Criteria and Thresholds for Behavioral Effects
- Application of Effect Thresholds to Beaked Whales
- Active Acoustic Source Descriptions
- Acoustic Exposure Calculation Methodology Assumptions
- Other Effects Considered
- Estimated Annual Acoustic Effects on Marine Mammals

4.3.1.7.5 Regulatory Framework

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Integration of Regulatory and Biological Frameworks

This section presents a **biological framework** within which potential effects can be categorized and then related to the existing **regulatory framework** of injury (Level A) and behavioral disruption (Level B).

Physiological and Behavioral Effects

Sound exposure may affect multiple biological traits of a marine animal; however, MMPA and ESA regulations provide guidance as to which traits should be used when determining effects. Specifically, effects that qualify as Level A harassment (and ESA harm) should address injury. Effects that qualify as Level B harassment (and ESA harassment) should address behavioral disruption. This guidance reduces the number of traits that must be considered in establishing a biological framework of effect assessment.

The biological framework proposed here is structured according to potential physiological and behavioral effects resulting from sound exposure. The range of effects may then be assessed to determine which qualify as harm or harassment under MMPA and ESA regulations. Physiology and behavior are chosen over other biological traits because:

- They are consistent with regulatory statements defining harm and harassment.
- They are components of other biological traits that may be relevant.
- They are a more sensitive and immediate indicator of effect.

For example, ecology is not used as the basis of the framework because the ecology of an animal is dependent upon the interaction of an animal with the environment. The animal's interaction with the environment is driven both by its physiological function and its behavior, and an ecological impact may not be observable over short periods of observation. Anatomy is not used because disruption of an animal's anatomy would necessarily result in a change in physiological function.

A "physiological effect" is defined here as one in which the "normal" physiological function of the animal is altered in response to sound exposure. Physiological function is any of a collection of processes ranging from biochemical reactions to mechanical interaction and operation of organs and tissues within an animal. A physiological effect may range from the most significant of impacts (i.e., mortality and serious injury) to lesser effects that would define the lower end of the physiological impact range, such as the non-injurious distortion of auditory tissues.

A "behavioral effect" is one in which the "normal" behavior or patterns of behavior of an animal are overtly disrupted in response to an acoustic exposure. Examples of behaviors of concern can be derived from the harassment definitions in the MMPA and ESA implementing regulations.

In this EA/OEA request the term "normal" is used to qualify distinctions between physiological and behavioral effects. Its use follows the convention of normal daily variation in physiological and behavioral function without the influence of anthropogenic acoustic sources. As a result, this EA/OEA uses the following definitions:

- A **physiological effect** is a variation in an animal's physiology that results from an anthropogenic acoustic exposure and exceeds the normal daily variation in physiological function.
- A **behavioral effect** is a variation in an animal's behavior or behavior patterns that results from an anthropogenic acoustic exposure and exceeds the normal daily variation in behavior, but which arises through normal physiological process (it occurs without an accompanying physiological effect).

The definitions of physiological effect and behavioral effect used here are specific to this EA/OEA and should not be confused with more global definitions applied to the field of biology.

It is reasonable to expect some physiological effects to result in subsequent behavioral effects. For example, a marine mammal that suffers a severe injury may be expected to alter diving or foraging to the degree that its variation in these behaviors is outside that which is considered normal for the species. If a physiological effect is accompanied by a behavioral effect, the overall effect is characterized as a physiological effect; physiological effects take precedence over behavioral effects with regard to their ordering. This approach provides the most conservative ordering of effects with respect to severity, provides a rational approach to dealing with the overlap of the definitions, and avoids circular arguments.

The severity of physiological effects generally decreases with decreasing sound exposure and/or increasing distance from the sound source. The same generalization does not consistently hold for behavioral effects because

they do not depend solely on the received sound level. Behavioral responses also depend on an animal's learned responses, innate response tendencies, motivational state, the pattern of the sound exposure, and the context in which the sound is presented. However, to provide a tractable approach to predicting acoustic effects that is relevant to the terms of behavioral disruption described in the MMPA, it is assumed here that the severities of behavioral effects also decrease with decreasing sound exposure and/or increasing distance from the sound source.

4.3.1.7.6 MMPA Level A and Level B Harassment

Categorizing potential effects as either physiological or behavioral effects allows them to be related to the harassment definitions. For military readiness activities, Level A harassment includes any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild. Injury defined in previous rulings (National Oceanic and Atmospheric Administration [NOAA], 2001; 2002), is the destruction or loss of biological tissue. The destruction or loss of biological tissue will result in an alteration of physiological function that exceeds the normal daily physiological variation of the intact tissue. For example, increased localized histamine production, edema, production of scar tissue, activation of clotting factors, white blood cell response, etc., may be expected following injury. Therefore, this EA/OEA assumes that all injury is qualified as a physiological effect and, to be consistent with prior actions and rulings (NOAA, 2001), all injuries (slight to severe) are considered Level A harassment.

Public Law 108-136 (2004) amended the definition of Level B harassment for military readiness activities, which applies to this action. For military readiness activities, Level B harassment is defined as "any act that disturbs or is likely to disturb a marine mammal or marine mammal stock by causing disruption of natural behavioral patterns including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering to a point where such behaviors are abandoned or significantly altered." Unlike Level A harassment, which is solely associated with physiological effects, both physiological and behavioral effects may cause Level B harassment.

MMPA Harassment Zones

The volumes of ocean in which Level A and Level B harassment are predicted to occur are described as **harassment zones**. All marine mammals predicted to be in a zone are considered exposed to harassment within the applicable harassment category. Figure 4.3-1 illustrates harassment zones extending from a hypothetical, directional sound source. (This figure is for illustrative purposes only and does not represent the sizes or shapes of the actual harassment zones).

The **Level A harassment zone** extends from the source out to the distance and exposure at which the slightest amount of injury is predicted to occur. The acoustic exposure that produces the slightest degree of injury is therefore the threshold value defining the outermost limit of the Level A harassment zone. Use of the threshold associated with the onset of slight injury as the most distant point and least injurious exposure takes account of all more serious injuries by inclusion within the Level A harassment zone.

This figure is intended to illustrate the general relationships between harassment zones and does not represent the sizes or shapes of the actual harassment zones.

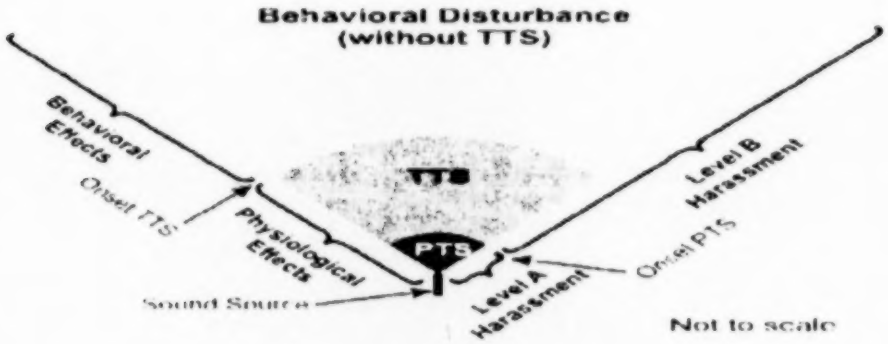

Figure 4.3-1. Summary of the Acoustic Effect Framework

The **Level B harassment zone** begins just beyond the point of slightest injury and extends outward from that point to include all animals that may possibly experience exposure of Level B harassment. Physiological effects extend beyond the range of slightest injury to a point where slight temporary distortion of the most sensitive tissue occurs, but without destruction or loss of that tissue. The animals predicted to be in this zone are assumed to experience Level B harassment by virtue of temporary impairment of sensory function (altered physiological function) that can disrupt behavior.

Auditory Tissues as Indicators of Physiological Effects

Exposure to continuous-type noise may cause a variety of physiological effects in mammals. For example, exposure to very high sound levels may affect the function of the visual system, vestibular system, and internal or-

gans (Ward, 1997). Exposure to high-intensity, continuous-type sounds of sufficient duration may cause injury to the lungs and intestines (*e.g.*, Dalecki et al., 2002). Sudden, intense sounds may elicit a "startle" response and may be followed by an orienting reflex (Ward, 1997; Jansen, 1998). The primary physiological effects of sound, however, are on the auditory system (Ward, 1997).

The mammalian auditory system consists of the outer ear, middle ear, inner ear, and central nervous system. Sound waves are transmitted through the outer and middle ears to fluids within the inner ear. The inner ear contains delicate electromechanical hair cells that convert the fluid motions into neural impulses that are sent to the brain. The hair cells within the inner ear are the most vulnerable to over-stimulation by noise exposure (Yost, 1994).

Very high sound levels may rupture the eardrum or damage the small bones in the middle ear (Yost, 1994). Lower level exposures may cause permanent or temporary hearing loss; such an effect is called a noise-induced threshold shift (NITS), or simply a threshold shift (TS) (Miller, 1974). A TS may be either permanent, in which case it is called a permanent threshold shift (PTS), or temporary, in which case it is called a temporary threshold shift (TTS). Still lower exposures may result in auditory masking, which may interfere with an animal's ability to hear other concurrent sounds.

Because the tissues of the ear appear to be the most susceptible to the physiological effects of sound and TSs tend to occur at lower exposures than other more serious auditory effects, PTS and TTS are used here as the biological indicators of physiological effects. The re-

mainder of this subchapter is, therefore, focused on TSs, including PTSs and TTSs. Since masking (without a resulting TS) is not associated with abnormal physiological function, it is not considered a physiological effect in this authorization request, but rather a potential behavioral effect.

Noise-Induced Threshold Shifts

The amount of TS depends on the amplitude, duration, frequency, and temporal pattern of the sound exposure. Threshold shifts will generally increase with the amplitude and duration of sound exposure. For continuous sounds, exposures of equal energy will lead to approximately equal effects (Ward, 1997). For intermittent sounds, less TS will occur than from a continuous exposure with the same energy (some recovery will occur between exposures) (Kryter et al., 1966; Ward, 1997).

The magnitude of a TS normally decreases with the amount of time post-exposure (Miller, 1974). The amount of TS just after exposure is called the initial TS. If the TS eventually returns to zero (the threshold returns to the pre-exposure value), the TS is a TTS. Since the amount of TTS depends on the time post-exposure, it is common to use a subscript to indicate the time in minutes after exposure (Quaranta et al., 1998). For example, TTS2 means a TTS measured two minutes after exposure. If the TS does not return to zero but leaves some finite amount of TS, then that remaining TS is a PTS. The distinction between PTS and TTS is based on whether there is a complete recovery of a TS following a sound exposure. Figure 4.3-2 shows two hypothetical

TSs, one that completely recovers, a TTS, and one that does not completely recover, leaving some PTS.

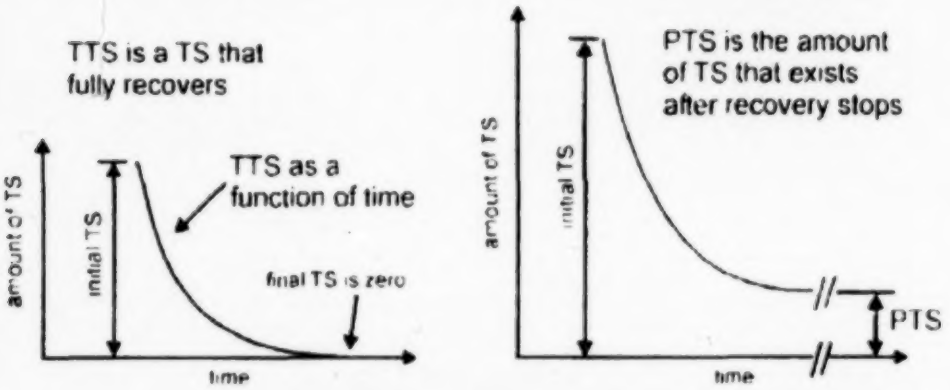

Figure 4.3-2. Hypothetical Temporary and Permanent Threshold Shifts

PTS, TTS and Harassment Zones

PTS is non-recoverable and, by definition, must result from the destruction of tissues within the auditory system. PTS therefore qualifies as an injury and is classified as Level A harassment under the wording of the MMPA. In the Draft EIS/OEIS, the smallest amount of PTS (onset-PTS) is taken to be the indicator for the smallest degree of injury that can be measured. The acoustic exposure associated with onset-PTS is used to define the outer limit of the Level A harassment zone.

TTS is recoverable and, as in recent rulings (NOAA, 2001, 2002a), is considered to result from the temporary, non-injurious distortion of hearing-related tissues. Because it is considered non-injurious, the acoustic exposure associated with onset-TTS is used to define the outer limit of the portion of the Level B harassment zone attributable to physiological effects. This follows from the concept that hearing loss potentially affects an

animal's ability to react normally to the sounds around it. Therefore, the potential for TTS is considered as a Level B harassment that is mediated by physiological effects upon the auditory system.

Marine Mammal Protection Act

Marine mammals predicted to receive a sound exposure with energy flux density level (EL) of 215 dB re 1 μPa^2-s or greater are assumed to experience PTS and are counted as Level A harassment. Marine mammals predicted to receive a sound exposure with EL greater than or equal to 195 dB re 1 μPa^2-s but less than 215 dB re 1 μPa^2-s are assumed to experience TTS and are counted as Level B harassment. In addition, all cetaceans predicted to receive a sound exposure with EL greater than or equal to 190 dB re 1 μPa^2-s but less than 195 dB re 1 μPa^2-s are assumed to experience behavioral disturbance and are also counted as Level B harassment. The only exception to this approach is the post-modeling consideration for beaked whales. All beaked whale harassment is considered Level A. Harassment levels are shown in Table 4.3-2.

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4.3.1.7.8 Criteria and Thresholds for Behavioral Effects

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Navy Derivation of Effect Threshold

The Navy supports a behavioral effects threshold based primarily on the behavioral observations reported in Schlundt et al. (2000) and Finneran et al. (2000, 2003b, 2005). Finneran and Schlundt (2004) summarize these data and provide the statistical analysis used in development of this threshold. These studies are applicable

because they used short-duration tones and frequencies similar to the sonar use modeled in this assessment. The most compelling reason for the use of this experimental data using captive animals was the considerable number of studies involved and the absence of any other data using representative sound characteristics and experimental controls.

The behavior of a subject during intense sound exposure experiments was subjectively compared to the subject's "normal" behaviors to determine whether a subject exhibited altered behavior during a session. In this context, altered behavior means a deviation from a subject's typical trained behaviors. The subjective assessment was only possible because behavioral observations were made with the same subjects during many baseline hearing sessions with no intense sound exposures. This allowed comparisons to be made between how a subject usually acted and how it acted during test sessions with intense sound exposures. Each exposure session was then categorized as "normal behavior" or "altered behavior." The behavioral alterations primarily consisted of reluctance on the part of the subjects, during a test session, to return to the site of a previous intense sound exposure. All instances of altered behavior were included in the statistical summary. An example of the results is as follows: At 192 dB re 1 μPa exposure SPL, 7 of 13 white whale sessions and 16 of 32 dolphin sessions were categorized as altered behavior. The pooled percentage is therefore 51%, or 23 of 45 total sessions.

Exposure levels corresponding to sessions with 25, 50, and 75% altered behavior were 180, 190, and 199 dB re 1 μPa SPL (or 180, 190, and 199 dB re 1 μPa^2-s EL), respectively. More detailed statistical results are provided in Finneran and Schlundt (2004).

The use of the 50% point to estimate a single numeric "all-or-nothing" threshold from a psychometric function is a common and accepted psychophysical technique (*e.g.*, Nachtigall, 2000; Yost, 1994). The 50% altered point from these data is a conservative approach to predicting Level B harassment because it actually represents the sensory threshold point where the sound was strong enough to potentially result in altered behavior 50% of the time; however, it may not result in significantly altered behavior as is required to be considered Level B harassment as defined for military readiness activities. Furthermore, Level B harassment for military readiness activities is defined as any act that disturbs or is likely to disturb a marine mammal indicating either a certainty of occurrence or that an occurrence is likely. It can be argued that phenomena with occurrences below 50% are "not likely" since in the majority of the times, they by definition will not occur.

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4.3.1.7.9 Application of Effect Thresholds to Beaked Whales

Recent beaked whale strandings have prompted inquiry into the relationship between high-amplitude continuous -type sound and the cause of those strandings. In the one stranding where U.S. Navy mid-frequency sonar has been identified as the most plausible contributory source to the stranding event, the Navy participated in an extensive investigation of the stranding with NMFS.

The Navy analyzed the known range of operational, biological, and environmental factors involved in the Bahamas stranding and focused on the interplay of these factors to reduce risks to beaked whales from ASW training operations. Consequently, the planned use and location in which COMPTUEX/JTFEX ASW would occur would maximize both training fidelity (readiness) and the protection of beaked whales.

The Bahamas exercise entailed multiple ships using mid-frequency active sonar during transits of a constricted channel. COMPTUEX/JTFEX ASW activities within the SOCAL OPAREA differ from the circumstances surrounding the Bahamas stranding because the SOCAL OPAREA does not have the combination of environmental conditions most likely to have contributed to the stranding.

In contrast to the Bahamas exercise, the COMPTUEX/JTFEX training events involving multiple surface ships and would not include multiple transits across a constricted channel. Additionally, the nominal source level for COMPTUEX/JTFEX training would be limited to 235 dB re 1 μPa^2-s @ 1 m for the SQS-53C.

A review of stranding incidents and ASW training practices has led the Navy to conclude that the proposed nominal source levels for training activities taking place during COMPTUEX/JTFEX would reduce possible effects to marine mammals while providing training realism. From a tactical perspective, higher source levels for shallow water ASW increase the likelihood of detection by enemy submarines and the amount of reverberation (reflections), which negatively impacts the ability to detect enemy submarines.

The interaction of unique environmental factors involved in the Bahamas and at the sites of other beaked whale stranding events are not present in the SOCAL OPAREA. The "Joint Interim Report, Bahamas Marine Mammal Stranding Event of 15-16 March 2000" (Department of Commerce [DOC] and U.S. Navy, 2001) concluded that environmental and biological factors, including the presence of a strong surface duct, unusual underwater bathymetry, a constricted channel with limited egress, and the presence of beaked whales were contributory factors to the stranding. Beaked whales are expected in the deeper portions of the SOCAL OPAREA; however, the combination of environmental factors contributing to the Bahamas stranding event is not present in the SOCAL OPAREA.

Since the exact causes of the stranding events are unknown, separate, meaningful impact thresholds cannot be derived specifically for beaked whales. The Navy, in consideration of the repetitive use of mid-frequency sonar proposed for USWTR operations on the east coast, took a conservative approach and treated all behavioral disturbances of beaked whales as a potential injury. All predicted Level B exposures of beaked whales were counted as non-lethal Level A exposures.

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4.3.1.7.11 Acoustic Exposure Calculation Methodology Assumptions

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Modeling Assumptions - Marine Mammal Behavior

Several assumptions were integrated into the exposure calculations. Inherent to the harassment prediction

model was the consideration of mammal distribution, hearing and diving behavior. Marine mammals were distributed with a static, uniform density across the range area. Marine mammal data does not provide a basis for reflecting greater resolution in the location and prediction of animal movements; therefore, changes in density distributions that can't be substantiated. It was also assumed that mammals have omni-directional hearing. This approach was used because there was no basis provided for the mammal responses over time to the sources. Diving behavior of the marine mammals was not modeled but was a factor in the calculation of population densities. It was assumed that marine mammals were exposed to the maximum receive levels calculated for the horizontal distance to the source. No attempt was made to predict animal behavior in response to sound in the water or their location relative to the point where the source originates.

Estimated marine mammal effects in which each acoustic source produced a total energy flux at or above the defined Level A and Level B harassment thresholds depend on a combination of the input data values for each of the four parameters described above. Calculations based on the harassment thresholds were performed for each combination of operations, acoustic source, depth of water and season with results summarized by species, sonar system and operations. The goal was an unbiased prediction of the number of exposures that are expected over the duration of one year's training given these diverse and variable factors.

4.3.1.7.12 Other Effects Considered

Acoustically Mediated Bubble Growth

One suggested cause of injury to marine mammals is rectified diffusion (Crum and Mao, 1996), the process of increasing the size of a bubble by exposing it to a sound field. This process is facilitated if the environment in which the ensonified bubbles exist is supersaturated with gas. Repetitive diving by marine mammals can cause the blood and some tissues to accumulate gas to a greater degree than is supported by the surrounding environmental pressure (Ridgway and Howard, 1979). Deeper and longer dives of some marine mammals (for example, beaked whales) are theoretically predicted to induce greater supersaturation (Houser et al., 2001). Conversely, studies have shown that marine mammal lung structure (both pinnipeds and cetaceans) facilitates collapse of the lungs at depths below approximately 50 m thus preventing nitrogen absorption (Kooyman et al., 1970). Collapse of the lungs would force air in to the non-air exchanging areas of the lungs (in to the bronchioles away from the aveloli) thus significantly decreasing nitrogen diffusion in to the body. Deep diving pinnipeds such as the northern elephant and Weddell seals typically exhale before long deep dives, further reducing air volume in the lungs (Kooyman et al., 1970). If rectified diffusion were possible in marine mammals exposed to high-level sound, conditions of tissue supersaturation could theoretically speed the rate and increase the size of bubble growth. Subsequent effects due to tissue trauma and emboli would presumably mirror those observed in humans suffering from decompression sickness.

It is unlikely that the short duration of sonar pings would be long enough to drive bubble growth to any substantial size, if such a phenomenon occurs. However, an alternative but related hypothesis has also been suggested: stable bubbles could be destabilized by high-level sound exposures such that bubble growth then occurs through static diffusion of gas out of the tissues. In such a scenario the marine mammal would need to be in a gas-supersaturated state for a long enough period of time for bubbles to become of a problematic size. Yet another hypothesis has speculated that rapid ascent to the surface following exposure to a startling sound might produce tissue gas saturation sufficient for the evolution of nitrogen bubbles (Jepson et al., 2003). In this scenario, the rate of ascent would need to be sufficiently rapid to compromise behavioral or physiological protections against nitrogen bubble formation. Collectively, these hypotheses can be referred to as "hypotheses of acoustically mediated bubble growth."

Although theoretical predictions suggest the possibility for acoustically mediated bubble growth, there is considerable disagreement among scientists as to its likelihood (Piantadosi and Thalmann, 2004; Evans and Miller, 2003). To date, ELs predicted to cause in vivo bubble formation within diving cetaceans have not been evaluated (NOAA, 2002b). Further, although it has been argued that traumas from recent beaked whale strandings are consistent with gas emboli and bubble-induced tissue separations (Jepson et al., 2003), there is no conclusive evidence of this. Because evidence supporting it is debatable, no marine mammals addressed in this EA/OEA are given special treatment due to the possibility for acoustically mediated bubble growth. Beaked whales are, however, assessed differently from other

species to account for factors that may have contributed to prior beaked whale strandings as set out in the previous subchapter.

Resonance

Another suggested cause of injury in marine mammals is air cavity resonance due to sonar exposure. Resonance is a phenomenon that exists when an object is vibrated at a frequency near its natural frequency of vibration—the particular frequency at which the object vibrates most readily. The size and geometry of an air cavity determine the frequency at which the cavity will resonate. Displacement of the cavity boundaries during resonance has been suggested as a cause of injury. Large displacements have the potential to tear tissues that surround the air space (for example, lung tissue).

Understanding resonant frequencies and the susceptibility of marine mammal air cavities to resonance is important in determining whether certain sonars have the potential to affect different cavities in different species. In 2002, NMFS convened a panel of government and private scientists to address this issue (NOAA, 2002b). They modeled and evaluated the likelihood that Navy mid-frequency active sonar caused resonance effects in beaked whales that eventually led to their stranding (DOC and U.S. Navy, 2001). The conclusions of that group were that resonance in air-filled structures was not likely to have caused the Bahamas stranding (NOAA, 2002b). The frequencies at which resonance was predicted to occur were below the frequencies utilized by the sonar systems employed. Furthermore, air cavity vibrations due to the resonance effect were not

considered to be of sufficient amplitude to cause tissue damage. This EA/OEA assumes that similar phenomenon would not be problematic in other cetacean species.

4.3.1.7.13 Estimated Annual Acoustic Effects on Marine Mammals

When analyzing the results of the acoustic exposure modeling to provide an estimate of effects, it is important to understand that there are limitations to the ecological data used in the model, and that the model results must be interpreted within the context of a given species' ecology. When reviewing the acoustic effects modeling results, it is also important to understand that the estimates of marine mammal sound exposures are presented without consideration of standard protective operating procedures or the fact that there have been no confirmed acoustic effects on any marine species in previous COMPTUEX/JTFEX—type exercises or from any other mid-frequency active sonar training events within the SOCAL OPAREA.

All Level B harassment would be short term and temporary in nature. In addition, the short-term non-injurious exposures predicted to cause TTS or temporary behavioral disruptions are considered Level B harassment in this EA/OEA even though it is highly unlikely that the disturbance would be to a point where behavioral patterns are abandoned or significantly altered. The modeling for COMPTUEX/JTFEX analyzed the potential interaction of mid-frequency active tactical sonar and underwater explosives with marine mammals that occur in SOCAL OPAREA. The potential exposure of all marine mammals in the COMPTUEX/JTFEX area is

summarized in tables 4.3-6 and 4.3-7. ESA-listed species noted in these tables are sperm, blue, fin, humpback, and sei whales.

Temporary Threshold Shift (TTS) and Behavioral Effects (without TTS)

Modeling assumptions over-estimate the number of incidents of TTS exposures. Specifically, modeling assumes that marine mammals are static and evenly distributed throughout the operating area. Mitigation measures (Chapter 5) are in place to minimize or avoid the potential for exposure of marine mammals to temporary threshold shift or behavioral effects without TTS. Modeling results predict 80,733 sub-TTS exposures (Table 4.3-6) and 4,084 TTS exposures (Table 4.3-7). Acoustic exposure modeling results shown in Table 4.3-6 and Table 4.3-7 represent total annual exposures without consideration of mitigation measures. To accurately predict the total number of modeled exposures over the 2-year period addressed in this EA/OEA, exposure numbers in the tables below need to be doubled.

Permanent Threshold Shift (PTS)

As shown in Table 4.3-7 modeling indicates that one species, common dolphin, has the potential to be exposed to received sound levels that might result in Permanent Threshold Shift (PTS). Given the limited range-to-permanent threshold shift (PTS) distance of mid-frequency active sonar, and implementation of marine mammal mitigation measures (Chapter 6), predicted exposure of common dolphin to energy resulting in a permanent, acoustic threshold shift would be avoided. PTS zone of influence (ZOI) for tactical sonar are so small that on on-board observers would readily observe an approach-

ing marine mammal. In addition, common dolphins travel in large pods, and are therefore, easily visible from an elevated platform; a ship or aircraft would readily see a marine mammal in sufficient time to observe an approaching marine mammal. No ESA-listed marine mammals are exposed to acoustic energy levels which would result in a permanent threshold shift.

Long-term Effects

COMPTUEX/JTFEX activities would be conducted in consistent areas on the SCIRC and throughout SOCAL OPAREAs, so marine mammal populations could be exposed to repeated activities over time. However, as described earlier, this COMPTUEX/JTFEX EA/OEA assumes that short-term non-injurious sound exposure levels predicted to cause TTS or temporary behavioral disruptions qualify as Level B harassment. Application of this criterion assumes an effect even though it is highly unlikely that all behavioral disruptions or instances of TTS will result in long term impacts. This approach overestimates effects because:

- There is no established scientific correlation between mid-frequency sonar use and long term abandonment or significant alteration of behavioral patterns in marine mammals in Southern California.
- Acoustic exposures below TTS result in an insignificant, minor disruption of behavior.
- It is highly unlikely that a marine mammal (or group of animals) would experience any long-term effects because the proposed training use within the COMPTUEX/JTFEX ASW modeling areas makes individual mammals' repeated and/

or prolonged exposures to high-level sonar signals unlikely. Specifically, mid-frequency sonars have limited marine mammal exposure ranges and relatively high platform speeds. The number of animals potentially exposed to Level A harassment from sonar is zero. The number of animals potentially exposed to Level A harassment from underwater detonations is small, potentially affecting 30 common dolphins and would be zero given implementation of proposed protective measures. Therefore, long term effects on individuals, populations or stocks are unlikely.

* * * * *

4.3.1.7.21 Estimated Acoustic Effects on Odontocetes not listed under ESA

Baird's Beaked Whale (*Berardius bairdii*)

Baird's beaked whale is not listed as endangered under the ESA, and the California/Oregon/Washington Stock is not considered strategic under the MMPA. The minimum population estimate for the California/Oregon/Washington Stock is 152 (CV=0.51) individuals (Carretta et al. 2005). The modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A harassment of Baird's whales would occur. The analysis estimates that up to four incidents of non-injurious behavioral harassment (Level B harassment) may be experienced by Baird's whales on annual basis (Table 4.3-12). Although modeling predicts non-injurious Level B exposures, all beaked whale exposures are counted as Level A. No Baird's whales would be exposed to impulsive noise or pressures from underwater detonations that would cause TTS or physical injury.

Table 4.3-12. Raw Annual Acoustic Model Output of Baird's Beaked Whale

Baird's Beaked Whale			
Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
(4)[1]	0	0	0

[1] All Level B exposures of beaked whales are categorized as Level A

Given the large size (up to 39 ft.[11.9 m]) of individual Baird's beaked whales, aggregation of approximately 9-13 animals, it is very likely that lookouts would detect a group of Baird's beaked whales at the surface. Additionally, protective measures call for continuous visual observation during operations with active sonar, therefore, Baird's beaked whales that migrate into the operating area would be detected by visual observers. Implementation of protective measures and probability of detecting a large sei whale reduces the likelihood of exposure, such that effects would be discountable.

MacLeod (1999) suggested that beaked whales use frequencies of between 300 Hz and 129 kHz for echolocation, and between 2 and 10 kHz, and possibly up to 16 kHz, for social communication. Both whistles and clicks have been recorded from Baird's beaked whales in the eastern North Pacific Ocean (Dawson et al., 1998). There is no direct information available on the exact hearing abilities of beaked whales (MacLeod, 1999). Beaked whale ears are predominantly adapted to hear ultrasonic frequencies (MacLeod, 1999). Based on the

anatomy of the ears of beaked whales, these species may be more sensitive than other cetaceans to low frequency sounds; however, as noted earlier, there is no direct evidence to support this idea (MacLeod 1999).

The exposures depicted in Table 4.3-12 would not necessarily occur to 4 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual Baird's whales experiencing harassment may be fewer than four. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on Baird's whales. The Navy therefore concludes that the proposed action would not affect annual rates of recruitment or survival for Baird's whales, and would not have a significant impact on this species and stock.

Bottlenose Dolphin California Coastal and Offshore Stock (*Tursiops truncatus*)

The bottlenose dolphin is not listed as endangered under the ESA. In southern California, two populations occur: a coastal population within 0.5 nm (0.9 km) of shore and a larger offshore population (Hansen, 1990). There is a minimum population estimate of 186 (CV=0.12) for the California Coastal Stock of the bottlenose dolphin, and 3,053 (CV=0.66) for the California/Oregon/Washington Offshore Stock (Carretta et al., 2005). Neither stock is considered depleted or strategic under the MMPA. The modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A harassment of bottlenose dolphins would occur. The analysis estimates that up to 516 incidents of non-injurious behavioral harassment (Level B harassment) may be expe-

rienced by bottlenose dolphins on annual basis (Table 4.3-13). Based on the distance of mid-frequency sonar activities from shore, all exposures are estimated to occur to the Offshore Stock, with no predicted exposure of the California Coastal Stock of Bottlenose Dolphins. No bottlenose dolphins would be exposed to impulsive noises or pressures from underwater detonations that would cause TTS or physical injury.

Table 4.3-13. Raw Annual Acoustic Model Output of Bottlenose Dolphin

Bottlenose Dolphin			
Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
516	0	0	0

Given the frequent surfacing, aggregation of approximately 10 animals (probability of trackline detection = 0.74; Barlow 2003), it is very likely that lookouts would detect a group of bottlenose dolphins at the surface. Additionally, protective measures call for continuous visual observation during operations with active sonar, therefore, bottlenose dolphins that migrate into the operating area would be detected by visual observers. Implementation of protective measures and probability of detecting bottlenose dolphins reduces the likelihood of exposure, such that effects would be discountable.

The acoustic abilities of bottlenose dolphins are well known including their response to anthropogenic sounds such as sonar or airguns. The bottlenose dolphin pro-

duces whistles in the range of 0.8 to 24 kHz with dominant frequencies of 3.5 to 14.5 kHz a low frequency band of sounds less than 2.0 kHz with dominant frequencies in the range of 0.3 to 0.9 kHz (Richardson et al., 1995). The echolocation clicks of the bottlenose dolphin are in the range of 110 to 130 kHz (Au, 1993). Audiograms of bottlenose dolphins show their range of hearing is approximately 0.1 to 150 kHz (reviews by Richardson et al., 1995, Nedwell, 2004). Bottlenose dolphins showed different reactions to boats, movement away or indifference, depending on the area, amount of boat activity and social behavior at the time of exposure (reviewed by Richardson et al., 1995). They did respond to mid-frequency tones (0.4 to 75 kHz tones at exposure levels of 100 to 201 dB re 1 μPa^2-s) in a laboratory setting (Schlundt et al., 2000, Finneran et al., 2005).

The exposures depicted in Table 4.3-13 would not necessarily occur to 516 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual bottlenose dolphins experiencing Level B harassment may be fewer than 516. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on bottlenose dolphins. The Navy therefore concludes that the proposed action would not affect annual rates of recruitment or survival for bottlenose dolphins, and would not have a significant impact on this species and stock.

Common Dolphin (Long-beaked and Short-beaked) (*Delphinus capensis* and *D. delphis*)

Two species of common dolphin occur off California, the more coastal long-beaked dolphin (*D. capensis*) and the

more offshore short-beaked dolphin (*D. delphis*). Thus, much of the available information has not differentiated between the two species. The long and short-beaked common dolphins are not listed under the ESA and are not considered depleted or strategic under the MMPA. The minimum population estimates are 43,360 (CV = 0.72) (Carretta et al., 2005). The modeling efforts and harassment analysis for mid-frequency active sonar estimate that Level A harassment of common dolphins could occur. The analysis estimates that up to 69,258 incidents of non-injurious behavioral harassment, 3,464 incidents of non-injurious physiological harassment (Level B harassment), and 8 incidents of Level A harassment may be experienced by common dolphins on annual basis (Table 4.3-14). Twenty-seven common dolphins could be exposed to impulsive noise or pressures from underwater detonations that could cause TTS and twenty-seven could be exposed to impulsive noise or pressures that could cause slight physical injury.

Table 4.3-14. Raw Annual Acoustic Model Output of Common Dolphin (Long-beaked and Short-beaked)

Sonar			Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	PTS >215 dB	TTS 182 dB/23 psi	Injury TM/Lung
69,258	3,464	8	27	27

Clicks and whistles have dominant frequency ranges of 23 to 67 kHz and 0.5 to 18 kHz, respectively (Kitten, 1998). Maximum source levels were approximately 180

dB 1 μPa-m (Fish and Turl, 1976). The audiogram was U-shaped with a steeper high-frequency branch with bandwidth up to 128 kHz at a level of 100 dB above the minimum threshold (Popov and Klishin 1998).

Given the frequent surfacing and their large group size of over a thousand animals (Leatherwood et al., 1982), it is very likely, that lookouts would detect a group of common dolphins at the surface. Additionally, protective measures call for continuous visual observation during operations with active sonar and underwater detonations, therefore, common dolphins that migrate into the operating area would be detected by visual observers. Exposure of common dolphins to energy levels associated with Level A harassment would not occur because protective measures would be implemented, large groups of common dolphins would be observed, and underwater detonations result in a small zone of influence.

The exposures depicted in Table 4.3-14 would not necessarily occur to 72,730 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual common dolphins experiencing Level B harassment would be fewer than 72,722 for mid-frequency active sonar. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on common dolphins. The Navy therefore concludes that the proposed action would not affect annual rates of recruitment or survival for common dolphins, and would not have a significant impact on this species and stock.

Modeling results indicate that common dolphins are not reasonably expected to be exposed to acoustic energy in

excess of onset-TTS from single, point source detonations. Implementation of protective measures listed in Chapter 5 will ensure effective mitigation such that this species would not be exposed to incidental Level A or Level B harassment

Cuvier's Beaked Whale (*Ziphius cavirostris*)

The Cuvier's beaked whale is not listed as endangered under the ESA, and the California/Oregon/Washington Stock is not considered to be strategic under the MMPA. The minimum population estimate for the California/Oregon/Washington Stock is 1,121 (CV=0.68) individuals (Carretta et al., 2005). The modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A harassment of Cuvier's beaked whales would occur. The analysis estimates that up to 208 incidents of non-injurious behavioral harassment and 10 incidents of non-injurious physiological harassment (Level B harassment) may be experienced by Cuvier's beaked whales on annual basis (Table 4.3-15). Although modeling predicts non-injurious Level B exposures, all beaked whale exposures are counted as Level A. No Cuvier's beaked whales would be exposed to impulsive noises or pressures from underwater detonations that would cause TTS or physical injury.

Table 4.3-15. Raw Annual Acoustic Model Output of Cuvier's Beaked Whale

Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
(208)[1]	(10)	0	0

[1] All Level B exposures of beaked whales are categorized as Level A

There is no information on the response of Cuvier's beaked whale exposed to anthropogenic sounds or on their acoustic abilities but other Ziphiid species have vocalizations in the range of <1.0 to 16 kHz (Richardson et al., 1995). Preliminary data on their diving behavior showed a range of dives from 19 to 87 minutes (Baird et al., 2004). Like many other species of odontocetes, Cuvier's beaked whales will likely dive and move away from the active sonar ship.

The exposures depicted in Table 4.3-15 would not necessarily occur to 218 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual Cuvier's beaked whales experiencing harassment may be fewer than 218. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on Cuvier's beaked whales. The Navy therefore concludes that the proposed action would not affect annual rates of recruitment or survival for Cuvier's beaked whales, and would not have a significant impact on this species and stock.

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Mesoplodont Beaked Whales (*Mesoplodon* spp)

The *Mesoplodon* spp. Beaked whales are not listed as endangered under the ESA, and the California/Oregon/Washington Stock is not considered to be strategic under the MMPA because not enough is known of the populations. The population estimate for the combined California/Oregon/Washington Stock is 1,247 (CV=0.92) individuals (Caretta et al., 2005). The modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A or Level B harassment of *Mesoplodon* spp whales would occur (Table 4.3-20).

Table 4.3-20. Raw Annual Acoustic Model Output of *Mesoplodon* spp. Beaked Whale

Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
0	0	0	0

There is no information on the response of *Mesoplodon* spp. beaked whales exposed to anthropogenic sounds or on their acoustic abilities but other *Mesoplodon* spp. species have vocalizations in the range of <1.0 to 80 kHz (Richardson et al., 1995; Cook et al., 2006). Preliminary data on their diving behavior showed a range of dives from 19 to 87 minutes (Baird et al., 2004). Like many other species of odontocetes, *Mesoplodon* spp. beaked whales will likely dive and move away from the active sonar ship.

The Navy therefore concludes that the proposed action would not affect annual rates of recruitment or survival for *Mesoplodon* spp., and would not have a significant impact on this species and stock.

Northern Right Whale Dolphin (*Lissodelphis borealis*)

The northern right whale dolphin is not listed under the ESA, and the California/Oregon/Washington Stock is not considered depleted or strategic. The minimum population estimate of the California/Oregon/Washington Stock is 16,417 (CV=0.26) (Carretta et al., 2005). The modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A harassment of northern right whale dolphins would occur. The analysis estimates that up to 3,003 incidents of non-injurious behavioral harassment and 227 incidents of non-injurious physiological harassment (Level B harassment) may be experienced by northern right whale dolphins on annual basis (Table 4.3-21). No northern right whale dolphins would be exposed to impulsive noises or pressures from underwater detonations that would cause TTS or physical injury.

Table 4.3-21. Raw Annual Acoustic Model Output of Northern Right Whale Dolphin

Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
3,003	227	0	0

Given their large group size of up to 100 animals (Leatherwood et al., 1982), it is very likely, that lookouts would detect a group of northern right whale dolphins at the surface. Additionally, protective measures call for continuous visual observation during operations with active sonar and underwater detonations, therefore, northern right whale dolphins that migrate into the operating area would be detected by visual observers. Implementation of protective measures and probability of detecting large groups of northern right whale dolphins reduces the likelihood of exposure.

Clicks with high repetition rates and whistles have been recorded from animals at sea (Fish and Turl, 1976; Leatherwood and Walker, 1979). Maximum source levels were approximately 170 dB 1 μPa-m (Fish and Turl, 1976). There is no published data on the hearing abilities of this species.

The exposures depicted in Table 4.3-21 would not necessarily occur to 3,230 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual northern right whale dolphins experiencing Level B harassment may be fewer than 3,230. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on northern right whale dolphins. The Navy therefore concludes that the proposed action would not affect annual rates of recruitment or survival for northern right whale dolphins, and would not have a significant impact on this species and stock.

Pacific White-sided Dolphin (*Lagenorhynchus obliquidens*)

The Pacific white-sided dolphin is not listed under the ESA, and the California/Oregon/Washington Stock is not considered depleted or strategic under the MMPA. The best estimate of the size of the California/Oregon/Washington Stock, derived from data collected during shipboard surveys conducted between 1996 and 2001, is 39,822 (CV=0.50, Carretta et al., 2005). The modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A harassment of Pacific white-sided dolphins would occur. The analysis estimates that up to 1,949 incidents of non-injurious behavioral harassment and 101 incidents of non-injurious physiological harassment (Level B harassment) may be experienced by northern right whale dolphins on annual basis (Table 4.3-22). No Pacific white-sided dolphins would be exposed to impulsive noises or pressures from underwater detonations that would cause TTS or physical injury.

Table 4.3-22. Raw Annual Acoustic Model Output of Pacific White-sided Dolphin

Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
1,949	101	0	0

Given their frequent surfacing and large group size of up to several thousand animals (Leatherwood et al. 1982), it is very likely that lookouts would detect a group

of Pacific white-sided dolphins at the surface. Additionally, protective measures call for continuous visual observation during operations with active sonar and underwater detonations, therefore, Pacific white-sided dolphins that migrate into the operating area would be detected by visual observers. Implementation of protective measures and probability of detecting large groups of Pacific white-sided dolphins reduces the likelihood of exposure.

Vocalizations produced by Pacific white-sided dolphins include whistles and clicks. Whistles are in the frequency range of 2 to 20 Hz (Richardson et al., 1995). Peak frequencies of the pulse trains for echolocation fall between 50 and 80 kHz; the peak amplitude is 170 dB re 1µPa-m (Fahner et al., 2004). Below 8 Hz and above 100 kHz, this dolphin's hearing was similar to that of other toothed whales.

The exposures depicted in Table 4.3-22 would not necessarily occur to 2,050 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual Pacific white-sided dolphins experiencing Level B harassment may be fewer than 2,050. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on Pacific white-sided dolphins. The Navy therefore concludes that the proposed action would not affect annual rates of recruitment or survival for Pacific white-sided dolphins, and would not have a significant impact on this species and stock.

Pantropical Spotted Dolphin (*Stenella attenuata*)

The pantropical spotted dolphin is not listed as endangered under the ESA, and is not considered to be a strategic stock under the MMPA. There are no abundance estimates available for this species in the NOAA stock assessment reports for this area of the Pacific. The modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A harassment of pantropical spotted dolphins would occur. The analysis estimates that up to 547 incidents of non-injurious behavioral harassment (Level B harassment) may be experienced by pantropical spotted dolphins on annual basis (Table 4.3-23). Six pantropical spotted dolphins could be exposed to impulsive noises or pressures from underwater detonations that could cause TTS but would not cause physical injury.

Table 4.3-23. Raw Annual Acoustic Model Output of Pantropical Spotted Dolphin

Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
547	0	6	0

Given their frequent surfacing and large group size of up to one thousand animals (Leatherwood et al., 1982), it is very likely that lookouts would detect a group of pantropical spotted dolphins at the surface. Additionally, protective measures call for continuous visual observation during operations with active sonar and underwater detonations, therefore, pantropical spotted

dolphins that migrate into the operating area would be detected by visual observers. Implementation of protective measures and probability of detecting large groups of pantropical spotted dolphins reduces the likelihood of exposure.

There is little information on the acoustic abilities of the pantropical spotted dolphin. They produce whistles in the range of 3.1 to 21.4 kHz with the dominant frequency being 6.7 to 17.8 kHz, above that of the active sonar frequencies. Although their full range of hearing may extend down to 1 kHz or below as reported for other small odontocetes (Richardson et al., 1995, Nedwell et al., 2004). There is no information on the response of pantropical spotted dolphins exposed to anthropogenic sounds but bottlenose dolphins exposed to mid-frequency sonar sounds in a laboratory setting had an increase in heart rate (Miksis et al., 2001) and a change in their trained behaviors such as moving away from or not returning to the sound source station (Schlundt et al., 2000, Finneran et al., 2005).

The exposures depicted in Table 4.3-23 would not necessarily occur to 547 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual Pacific white-sided dolphins experiencing Level B harassment may be fewer than 547. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on pantropical spotted dolphins. The Navy therefore concludes that the

proposed action would not affect annual rates of recruitment or survival for pantropical spotted dolphins, and would not have a significant impact on this species and stock.

Modeling results indicate that pantropical spotted dolphins are not reasonably expected to be exposed to acoustic energy in excess of onset-TTS from single, point source detonations. The Level A zone of influence of the largest detonations (MK 83) extends to 1,000 yards from the source. Implementation of protective measures listed in Chapter 5 will ensure effective mitigation such that this species would not be exposed to incidental Level A or Level B harassment.

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Risso's Dolphin (*Grampus griseus*)

Risso's dolphin is not listed under the ESA, and the California/Oregon/Washington Stock is not considered depleted or strategic. The population estimate of the California/Oregon/Washington Stock is 12,748 (CV=0.28) (Carretta et al., 2005). The modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A harassment of Risso's dolphins would occur. The analysis estimates that up to 2,050 incidents of non-injurious behavioral harassment and 96 incidents of non-injurious physiological harassment (Level B harassment) may be experienced by Risso's dolphins on annual basis (Table 4.3-25). No Risso's dolphins would be exposed to impulsive noises or pressures from underwater detonations that would cause TTS or cause physical injury.

Table 4.3-25. Raw Annual Acoustic Model Output of Risso's Dolphin

Risso's Dolphin			
Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
2,050	96	0	0

Given their frequent surfacing, light coloration and large group size of up to several hundred animals (Leatherwood et al., 1982), it is very likely that lookouts would detect a group of Risso's dolphins at the surface. Additionally, protective measures call for continuous visual observation during operations with active sonar and underwater detonations, therefore, Risso's dolphins that migrate into the operating area would be detected by visual observers. Implementation of protective measures and probability of detecting large groups of Risso's dolphins reduces the likelihood of exposure.

Risso's dolphins produce whistles in the range of 3.5 to 4.5 kHz, pulse bursts in the range of 0.1 to at least 8 kHz (Richardson et al., 1995), and echolocation sounds in the range of 30 to 70 kHz (Madsen et al., 1994). The audiogram of the Risso's dolphin shows that they hear from about 8 to 100 kHz (Nachtigall et al., 1995). Their echolocation clicks range up to at least 65 kHz (Au, 1993).

The exposures depicted in Table 4.3-25 would not necessarily occur to 2,146 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual Risso's dolphins experiencing Level B harassment may be fewer than 2,146. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on Risso's dolphins. The Navy therefore concludes that the proposed action would not affect annual rates of recruitment or survival for Risso's dolphins, and would not have a significant impact on this species and stock.

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Striped Dolphin (*Stenella coeruleoalba*)

The striped dolphin is not listed as endangered under the ESA, and the California/Oregon/Washington Stock is not considered to be depleted or strategic under the MMPA. The best estimate of the size of the California/Oregon/Washington Stock is 13,934 (CV=0.53; Carretta et al., 2004). The modeling efforts and harassment analysis for mid-frequency active sonar estimate that no Level A harassment of striped dolphins would occur. The analysis estimates that up to 1,554 incidents of non-injurious behavioral harassment and 72 incidents of non-injurious physiological (Level B harassment) may be experienced by striped dolphins on annual basis (Table 4.3-28). Six striped dolphins could be exposed to impulsive noises or pressures from underwater detonations hat could cause TTS but would not cause physical injury.

Table 4.3-28. Raw Annual Acoustic Model Output of Striped Dolphin

Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
1,554	72	6	0

Given their frequent surfacing, aerobatics and large mean group size of 37 animals (probability of trackline detection = 0.77; Barlow, 2003), it is very likely that lookouts would detect a group of striped dolphins at the surface. Additionally, protective measures call for continuous visual observation during operations with active sonar, therefore, striped dolphins that migrate into the operating area would be detected by visual observers. Implementation of protective measures and probability of detecting groups of striped dolphins reduces the likelihood of exposure.

Striped dolphins produce whistles in the range of 6 to 24 kHz with the dominant frequency being 8 to 12.5 kHz, above that of the active sonar frequencies. Audiograms of striped dolphins show a range of hearing from 0.5 to 160 kHz with maximum sensitivity between 29 and 123 kHz Castellon et al., 2003). There is no information on the response of striped dolphins exposed to anthropogenic sounds but bottlenose dolphins exposed to mid-frequency sonar sounds in a laboratory setting had an increase in heart rate (Miksis et al., 2001) and a change

in their trained behaviors such as moving away from or not returning to the sound source station (Schlundt et al., 2000, Finneran et al., 2005).

The exposures depicted in Table 4.3-28 would not necessarily occur to 1,626 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual striped dolphins experiencing Level B harassment may be fewer than 1,626. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on striped dolphins. The Navy therefore concludes that the proposed action would not affect annual rates of recruitment or survival for striped dolphins, and would not have a significant impact on this species and stock.

Modeling results indicate that striped dolphins are not reasonably expected to be exposed to acoustic energy in excess of onset-TTS from single, point source detonations. The Level A zone of influence of the largest detonations (MK 83) extends to 1,000 yards from the source. Implementation of protective measures listed in Chapter 5 will ensure effective mitigation such that this species would not be exposed to incidental Level A or Level B harassment.

Ziphiid Beaked Whales

The Longman's beaked whale is not listed as endangered under the ESA, and the Hawaiian Stock is not considered to be strategic under the MMPA. The population estimate for the Hawaiian Stock is 766 (CV=1.05) individuals (Carretta et al., 2005). The modeling efforts and harassment analysis for mid-frequency active sonar

estimate that no Level A harassment of Ziphiid beaked whales would occur. The analysis estimates that up to 49 incidents of non-injurious behavioral and 3 non-injurious physiological harassment (Level B harassment) may be experienced by Ziphiid beaked whales on annual basis (Table 4.3-29). Although modeling predicts non-injurious Level B exposures, all beaked whale exposures are counted as Level A. No Ziphiid beaked whales would be exposed to impulsive noise or pressures from underwater detonations that would cause TTS or physical injury.

Table 4.3-29. Raw Annual Acoustic Model Output of Ziphiid Beaked Whale

Sonar		Underwater Detonations	
Behavioral 173-<195 dB	TTS 195-<215 dB	TTS 182 dB/23 psi	Injury TM/Lung
(49)	(3)	0	0

[1] All Level B exposures of beaked whales are categorized as Level A.

The exposures depicted in Table 4.3-29 would not necessarily occur to 52 different individuals. The same individual could experience behavioral disruption more than once over the course of a year, particularly if the animal is resident in the area of the range. Thus, the estimated number of individual Ziphiid beaked whales experiencing harassment may be fewer than 52. Mitigation measures detailed in Chapter 5 would further reduce the potential for any effect on Ziphiid beaked whales. The Navy therefore concludes that the proposed action

would not affect annual rates of recruitment or survival for Ziphiids whales, and would not have a significant impact on this species and stock.

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4.3.1.8 Summary of Regulatory Framework

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4.3.1.8.2 Marine Mammal Protection Act (MMPA)

No incidental harassment of marine mammals is expected as a result of underwater detonations. The predicted incidents of harassment from the acoustic modeling were considered in the context of the mitigation measures in Chapter 5. As a result, takes of marine mammals associated with underwater detonations are not reasonably foreseeable.

As a result of acoustic effects associated with mid-frequency active sonar use, the proposed action may result in incidental Level B harassment of 23 species of marine mammals. By Navy policy developed in conjunction with NMFS, modeled Level B harassment of beaked whale species are considered as potential Level A harassment. In addition, common dolphins may be exposed to Level A harassment from mid-frequency active sonar. Mitigation measures are expected to be effective in reducing the potential for Level A harassment. No serious injury or mortality of any marine mammal species is reasonably foreseeable. No adverse effects on the annual rates of recruitment or survival of any of the species and stocks assessed in this document are expected as a result of the estimated incidents of Level B and very limited estimated Level A harassment. In addition, the mitigation measures presented in Chapter 5

result in the action having the least practicable adverse impact on species or stocks.

Title 16 United States Code, Section 1371(f) of the MMPA provides that [t]he Secretary of Defense, after conferring with the Secretary of Commerce, the Secretary of the Interior or both as appropriate, may exempt any action or category of actions undertaken by the Department of Defense or its components from compliance with any requirement of this chapter, if the Secretary determines that it is necessary for national defense. (Section 1371 (f) (1)). An exemption is effective for the period specified by the Secretary of Defense not to exceed two years.

(Section 1371 (f) (2)). Compliance with the MMPA for this action is satisfied due to the issuance on January 23, 2007, of a National Defense Exemption (NDE) from the Requirements of the MMPA for Certain DoD Military Readiness Activities That Employ Mid-Frequency Active Sonar or Improved Extended Echo Ranging Sonobuoys (NDE). The NDE is to last for a period of two years, or the date at which the Department of the Navy is granted authorization under the MMPA for one, or both of the categories now covered by the NDE.

The 2007 NDE further stipulates that all exempted military readiness activities employing mid-frequency active sonar shall employ the "Mid-Frequency Active Sonar Mitigation Measures during Major Training Exercises or within Established DoD Maritime Ranges and Established Operating Areas." As detailed in Chapter 5, these measures will be implemented as part of the Proposed Action.

* * * * *

CHAPTER 5

PROTECTIVE MEASURES RELATED TO ACOUSTIC EFFECTS

Effective training in the proposed COMPTUEX/JTFEX ASW areas dictates that ship, submarine, and aircraft participants utilize their sensors and exercise weapons to their optimum capabilities as required by the mission. The Navy recognizes that such use has the potential to cause behavioral disruption of some marine mammal species in the vicinity of an exercise (as outlined in Chapter 4). Although any disruption of natural behavioral patterns is not likely to be to a point where such behavioral patterns are abandoned or significantly altered, this chapter presents the Navy's protective measures, outlining steps that would be implemented to protect marine mammals and Federally-listed species during COMPTUEX/JTFEX operations. It should be noted that these protective measures have been standard operating procedures for unit level ASW training since 2004. In addition, the Navy coordinated with the National Marine Fisheries Service (NMFS) to further develop measures for protection of marine mammals during the period of the National Defense Exemption (NDE) and those mitigations for mid-frequency active sonar are detailed in this section. This chapter also presents a discussion of other measures that have been considered and rejected because they are either: (1) not feasible; (2) present a safety concern; (3) provide no known or ambiguous protective benefit; or (4) impact the effectiveness of the required ASW training military readiness activity.

5.1 Mid-Frequency Active Sonar Operations

5.1.1 General Maritime Protective Measures: Personnel Training

1. All lookouts onboard platforms involved in ASW training events will review the NMFS-approved Marine Species Awareness Training (MSAT) material prior to use of mid-frequency active sonar.
2. All Commanding Officers, Executive Officers, and officers standing watch on the Bridge will have reviewed the MSAT material prior to a training event employing the use of mid-frequency active sonar.
3. Navy lookouts will undertake extensive training in order to qualify as a watchstander in accordance with the Lookout Training Handbook (NAVEDTRA, 12968-B).
4. Lookout training will include on-the-job instruction under the supervision of a qualified, experienced watchstander. Following successful completion of this supervised training period, Lookouts will complete the Personal Qualification Standard program, certifying that they have demonstrated the necessary skills (such as detection and reporting of partially submerged objects). This does not forbid personnel being trained as lookouts from being counted as those listed in previous measures so long as supervisors monitor their progress and performance.
5. Lookouts will be trained in the most effective means to ensure quick and effective communication within the command structure in order to fa-

cilitate implementation of protective measures if marine species are spotted.

5.1.2 General Maritime Protective Measures: Lookout and Watchstander Responsibilities

6. On the bridge of surface ships, there will always be at least three people on watch whose duties include observing the water surface around the vessel.

7. All surface ships participating in ASW exercises will, in addition to the three personnel on watch noted previously, have at all times during the exercise at least two additional personnel on watch as lookouts.

8. Personnel on lookout and officers on watch on the bridge will have at least one set of binoculars available for each person to aid in the detection of marine mammals.

9. On surface vessels equipped with mid-frequency active sonar, pedestal mounted "Big Eye" (20x110) binoculars will be present and in good working order to assist in the detection of marine mammals in the vicinity of the vessel.

10. Personnel on lookout will employ visual search procedures employing a scanning methodology in accordance with the Lookout Training Handbook (NAVEDTRA 12968-B).

11. After sunset and prior to sunrise, lookouts will employ Night Lookouts Techniques in accordance with the Lookout Training Handbook.

12. Personnel on lookout will be responsible for reporting all objects or anomalies sighted in the

water (regardless of the distance from the vessel) to the Officer of the Deck, since any object or disturbance (*e.g.*, trash, periscope, surface disturbance, discoloration) in the water may be indicative of a threat to the vessel and its crew or indicative of a marine species that may need to be avoided as warranted.

5.1.3 Operating Procedures

13. A Letter of Instruction, Mitigation Measures Message or Environmental Annex to the Operational Order will be issued prior to the exercise to further disseminate the personnel training requirement and general marine mammal protective measures.

14. Commanding Officers will make use of marine species detection cues and information to limit interaction with marine species to the maximum extent possible consistent with safety of the ship.

15. All personnel engaged in passive acoustic sonar operation (including aircraft, surface ships, or submarines) will monitor for marine mammal vocalizations and report the detection of any marine mammal to the appropriate watch station for dissemination and appropriate action.

16. During mid-frequency active sonar operations, personnel will utilize all available sensor and optical systems (such as Night Vision Goggles[)] to aid in the detection of marine mammals.

17. Navy aircraft participating in exercises at sea will conduct and maintain, when operationally

feasible and safe, surveillance for marine species of concern as long as it does not violate safety constraints or interfere with the accomplishment of primary operational duties.

18. Aircraft with deployed sonobuoys will use only the passive capability of sonobuoys when marine mammals are detected within 200 yards of the sonobuoy.

19. Marine mammal detections will be immediately reported to assigned Aircraft Control Unit for further dissemination to ships in the vicinity of the marine species as appropriate where it is reasonable to conclude that the course of the ship will likely result in a closing of the distance to the detected marine mammal.

20. Safety Zones - When marine mammals are detected by any means (aircraft, shipboard lookout, or acoustically) within 1,000 yards of the sonar dome (the bow), the ship or submarine will limit active transmission levels to at least 6 dB below normal operating levels.

    (i) Ships and submarines will continue to limit maximum transmission levels by this 6-dB factor until the animal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2,000 yards beyond the location of the last detection.

    (ii) Should a marine mammal be detected within or closing to inside 500 yards of the sonar dome, active sonar transmis-

sions will be limited to at least 10 dB below the equipment's normal operating level. Ships and submarines will continue to limit maximum ping levels by this 10-dB factor until the animal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2000 yards beyond the location of the last detection.

(iii) Should the marine mammal be detected within or closing to inside 200 yards of the sonar dome, active sonar transmissions will cease. Sonar will not resume until the animal has been seen to leave the area, has not been detected for 30 minutes, or the vessel has transited more than 2,000 yards beyond the location of the last detection.

(iv) Special conditions applicable for dolphins and porpoises only: If, after conducting an initial maneuver to avoid close quarters with dolphins or porpoises, the Officer of the Deck concludes that dolphins or porpoises are deliberately closing to ride the vessel's bow wave, no further mitigation actions are necessary while the dolphins or porpoises continue to exhibit bow wave riding behavior.

(v) If the need for power-down should arise as detailed in "Safety Zones" above, Navy shall follow the requirements as

though they were operating at 235 dB - the normal operating level (i.e., the first power-down will be to 229 dB, regardless of at what level above 235 sonar was being operated).

21. Prior to start up or restart of active sonar, operators will check that the Safety Zone radius around the sound source is clear of marine mammals.

22. Sonar levels (generally) - Navy will operate sonar at the lowest practicable level, not to exceed 235 dB, except as required to meet tactical training objectives.

23. Helicopters shall observe/survey the vicinity of an ASW Operation for 10 minutes before the first deployment of active (dipping) sonar in the water.

24. Helicopters shall not dip their sonar within 200 yards of a marine mammal and shall cease pinging if a marine mammal closes within 200 yards after pinging has begun.

25. Submarine sonar operators will review detection indicators of close-aboard marine mammals prior to the commencement of ASW operations involving active mid-frequency sonar.

26. Increased vigilance during major ASW training exercises with tactical active sonar when critical conditions are present.

Based on lessons learned from strandings in Bahamas 2000, Madeiras 2000, Canaries 2002 and

Spain 2006, beaked whales are of particular concern since they have been associated with mid-frequency active sonar operations. Navy should avoid planning major ASW training exercises with mid-frequency active sonar in areas where they will encounter conditions which, in their aggregate, may contribute to a marine mammal stranding event.

The conditions to be considered during exercise planning include:

(i) Areas of at least 1000 m depth near a shoreline where there is a rapid change in bathymetry on the order of 1000-6000 meters occurring across a relatively short horizontal distance (*e.g.*, 5 nm).

(ii) Cases for which multiple ships or submarines (≥ 3) operating mid-frequency active sonar in the same area over extended periods of time (≥ 6 hours) in close proximity (≤ 10 nm apart).

(iii) An area surrounded by land masses, separated by less than 35 nm and at least 10 nm in length, or an embayment, wherein operations involving multiple ships/subs (≥ 3) employing mid-frequency active sonar near land may produce sound directed toward the channel or embayment that may cut off the lines of egress for marine mammals.

(iv) Though not as dominant a condition as bathymetric features, the historical presence of a significant surface duct (i.e. a

mixed layer of constant water temperature extending from the sea surface to 100 or more feet).

If the major exercise must occur in an area where the above conditions exist in their aggregate, these conditions must be fully analyzed in environmental planning documentation. Navy will increase vigilance by undertaking the following additional protective measure:

A dedicated aircraft (Navy asset or contracted aircraft) will undertake reconnaissance of the embayment or channel ahead of the exercise participants to detect marine mammals that may be in the area exposed to active sonar. Where practical, advance survey should occur within about two hours prior to mid-frequency active sonar use, and periodic surveillance should continue for the duration of the exercise. Any unusual conditions (*e.g.*, presence of sensitive species, groups of species milling out of habitat, any stranded animals) shall be reported to the Office in Tactical Command (OTC), who should give consideration to delaying, suspending or altering the exercise.

All safety zone power down requirements described above apply.

The post-exercise report must include specific reference to any event conducted in areas where the above conditions exist, with exact location and time/duration of the event, and noting results of surveys conducted.

Note that these conditions were reviewed for preparation of this EA/OEA and it was found that the conditions

are not present in their aggregate during COMPTUEX/JTFEX.

5.1.4 Coordination and Reporting

27. Navy will coordinate with the local NMFS Stranding Coordinator for any unusual marine mammal behavior and any stranding, beached live/dead or floating marine mammals that may occur at any time during or within 24 hours after completion of mid-frequency active sonar use associated with ASW training activities.

28. Navy will submit a report to the Office of Protected Resources, NMFS, within 120 days of the completion of a Major Exercise. This report must contain a discussion of the nature of the effects, if observed, based on both modeled results of real-time events and sightings of marine mammals. Monitoring reports provided to NMFS, unless classified, also shall be provided to the California Coastal Commission.

29. If a stranding occurs during an ASW exercise, NMFS and Navy will coordinate to determine if mid-frequency active sonar should be temporarily discontinued while the facts surrounding the stranding are collected.

5.1.5 Alternative Protective Measures Considered but Eliminated

Potential marine mammal acoustic exposures that may result in harassment and/or a behavioral reaction or rarely injury (tissue damage or PTS) are further reduced by the protective measures described above. Therefore, the Navy concludes that the Proposed Action

and protective measures achieve the least practical adverse impact on species or stocks of marine species.

Several additional measures were analyzed and dismissed from primary consideration given unknown, questionable, or limited effectiveness as a protective measure, known or likely detrimental consequences to personnel safety and the effectiveness of the military readiness activity, and based on the practicality of implementation. These measures include:

- Using non-Navy personnel onboard Navy vessels to provide surveillance of ASW or other exercise events.
    - Security clearance issues would have to be overcome to allow non-Navy observers onboard exercise participants.
    - Use of non-Navy observers is not necessary given that Navy lookouts are extensively trained in spotting items at or near the water surface. Navy lookouts receive more hours of training, and utilize their skills more frequently, than many third party trained personnel.
    - Use of Navy lookouts is the most effective means to ensure quick and effective communication within the command structure and facilitate implementation of protective measures if marine species are spotted. A critical skill set of effective Navy training is communication. Navy lookouts are trained to act swiftly and decisively to ensure that information is passed to the appropriate supervisory personnel.

- Navy and NMFS have not developed the necessary lengthy and detailed procedures that would be required to facilitate the integration of information from non-Navy observers into the command structure.
- Some training events during COMPTUEX/JTFEX will span one or more 24-hour period with operations underway continuously in that timeframe. It is not feasible to maintain non-Navy surveillance of these operations given the number of non-Navy observers that would be required onboard.
- Surface ships having active mid-frequency sonar have limited berthing capacity. Exercise planning includes careful consideration of this limited capacity in the placement of exercise controllers, data collection personnel, and Afloat Training Group personnel on ships involved in the exercise. Inclusion of non-Navy observers onboard these ships would require that in some cases, there would be no additional berthing space for essential Navy personnel required to fully evaluate and efficiently use the training opportunity to accomplish the exercise objectives.

- Visual monitoring or surveillance using non-Navy observers from non-military aircraft or vessels to survey before, during, and after exercise events.
  - Use of non-Navy observers in the air or on civilian vessels compromises security due to the requirement to provide advance notification of

specific times/locations of Navy platforms (this information is Classified).

- The areas where COMPTUEX/JTFEX events will mainly occur (the representative areas modeled) covers approximately 46,000 nm2. Contiguous ASW events may cover many hundreds of square miles. The number of civilian ships and/or aircraft required to monitor the area of these events would be considerable. It is, thus, not feasible to survey or monitor the large exercise areas in the time required to ensure these areas are devoid of marine mammals. In addition, marine mammals may move into or out of an area, if surveyed before an event, or an animal could move into an area after an exercise took place. Given that there are no adequate controls to account for these or other possibilities and there are no identified research objectives, there is no utility to performing either a before or an after-the-event survey of an exercise area.
- Survey during an event raises safety issues with multiple, slow civilian aircraft operating in the same airspace as military aircraft engaged in combat training activities. In addition, most of the training events take place far from land, limiting both the time available for civilian aircraft to be in the exercise area and presenting a concern should aircraft mechanical problems arise.
- Scheduling civilian vessels or aircraft to coincide with COMPTUEX/JTFEX events would impact training effectiveness since exercise

event timetables can not be precisely fixed and are instead based on the free-flow development of tactical situations. Waiting for civilian aircraft or vessels to complete surveys, refuel, or be on station would slow the unceasing progress of the exercise and impact the effectiveness of the military readiness activity.

- The vast majority of COMPTUEX/JTFEX training events involve a Navy aerial asset with crews specifically training to hone their detection of objects in the water. The capability of sighting from both surface and aerial platforms provides excellent survey capabilities using the Navy's existing exercise assets.
- Multiple events may occur simultaneously in areas at opposite ends of the Southern California range areas and then continue for up to 96 hours. There are not enough qualified third-party personnel to accomplish the monitoring task.
- There is no identified research design, sampling procedures, or purpose for any survey or monitoring effort.

- Seasonal, problematic complex/steep bathymetry, or habitat avoidance.
  - The habitat requirements for most of the marine mammals in the Southern Californian Islands are unknown. Accordingly, there is no information available on possible alternative exercise locations or environmental factors that would otherwise be less important to marine mammals in the Southern Californian Is-

lands. In addition, exercise locations were very carefully chosen by exercise planners based on training requirements and the ability of ships and submarines to operate safely. Moving the exercise events to alternative locations would impact the effectiveness of the training and has no known utility.

- Using active sonar with output levels as low as possible consistent with mission requirements and use of active sonar only when necessary.
    - Operators of sonar equipment are always cognizant of the environmental variables affecting sound propagation. In this regard the sonar equipment power levels are always set consistent with mission requirements.
    - Active sonar is only used when required by the mission since it has the potential to alert opposing forces to the sonar platform's presence. Passive sonar and all other sensors are used in concert with active sonar to the maximum extent practical when available and when required by the mission.
- Suspending the exercise at night, periods of low visibility, and in high sea-states when marine mammals are not readily visible.
    - It is imperative that the Navy be able to operate at night, in periods of low visibility, and in high sea-states. The Navy must train as we are expected to fight, and adopting this prohibition would eliminate this critical military readiness requirement.

- Scaling down the exercise to meet core aims.
  - Training exercises are always constrained by the availability of funding, resources, personnel, and equipment with the result being they are always scaled down to meet only the core requirements.
- Limiting the active sonar event locations.
  - Areas where events are scheduled to occur are carefully chosen to provide for the safety of operations and to allow for the realistic tactical development of the exercise scenario. Otherwise limiting the exercise to a few areas would adversely impact the effectiveness of the training.
  - Limiting the exercise areas would concentrate all sonar use, resulting in unnecessarily prolonged and intensive sound levels vice the more transient exposures predicted by the current planning that makes use of multiple exercise areas.
- Passive Acoustic Monitoring.
  - As noted in the preceding section, passive detection capabilities are used to the maximum extent practicable consistent with the mission requirements to alert exercise participants to the presence of marine mammals in an event location.
- Using ramp-up to attempt to clear an area prior to the conduct of exercises.
  - Ramp-up procedures involving slowly increasing the sound in the water to neces-

sary levels, have been utilized in other non-Department of Defense activities. Ramp-up procedures are not a viable alternative for training exercises, as the ramp-up would alert opponents to the participants' presence and not allow the Navy to train, thus adversely impacting the effectiveness of the military readiness activity.

- Ramp-up for sonar as a protective measure is also an unproven technique. The implicit assumption is that animals would have an avoidance response to the low power sonar and would move away from the sound and exercise area; however, there is no data to indicate this assumption is correct. Given there is no data to indicate that this is even minimally effective and because ramp-up would have an impact on the effectiveness of the military readiness activity, it was eliminated from further consideration.

- Reporting marine mammal sightings to augment scientific data collection.
  - Ships, submarines, aircraft, and personnel engaged in the COMPTUEX/JTFEX are intensively employed throughout the duration of the exercise. Their primary duty is accomplishment of the exercise goals, and they should not be burdened with additional duties, unrelated to that task. Any additional workload assigned that is unrelated to their primary duty would ad-

versely impact the effectiveness of the military readiness activity they are undertaking.

5.1.6 Conservation Measures

The Navy will continue to fund ongoing marine mammal research in the field of acoustic responses and population dynamics, abundance and density. Results of conservation efforts by the Navy in other locations will also be used to support efforts in the Southern California range areas. The Navy is coordinating long term monitoring/ studies of marine mammals on various established ranges and operating areas.

The Navy is implementing a long-term monitoring program of marine mammal populations including abundance and distribution in the Southern California Operating Areas, including evaluation of trends and response to anthropogenic sound sources. The Navy will continue its internal Navy marine mammal research and the Navy's contribution to university/external research to improve the state of the science regarding marine species biology and acoustic effects. In addition, the Navy will continue to share data with NMFS and inform NMFS on current research and development efforts.

The Navy has contracted with a consortium of researchers from Duke University, University of North Carolina at Wilmington, University of St. Andrews, and the NMFS Northeast Fisheries Science Center to conduct a pilot study analysis and develop a proposed survey and monitoring plan that lays out the recommended approach for surveys (aerial/shipboard, frequency, spatial extent, etc.) and data analysis (standard line-transect, spatial modeling, etc.) necessary to establish a baseline

of protected species distribution and abundance and monitor for changes that might be attributed to ASW operations on the Atlantic Fleet Undersea Warfare Training Range, Southern California and Hawaiian range areas.

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CHAPTER 6
CUMULATIVE IMPACTS

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6.3 Other Past, Present, and Reasonably Foreseeable Future Activities

6.3.1 Commercial Fishing

NOAA estimates that approximately 6,000 marine mammals die annually as a result of by catch from U.S. fisheries (Waring et al., 2002). In addition, commercial fisheries may accidentally entangle and drown or injure cetaceans by lost and discarded fishing gear (*e.g.*, Northridge and Hofman, 1999).

National Marine Fisheries Service (NMFS) 2007 proposed List of Fisheries (LOF) categorizes fisheries by their level of impact on marine mammals. The LOF was proposed in the Federal Register on December 4, 2006, and is an MMPA-required annual list consisting of a two-tiered, stock-specific approach that addresses the total impact of all fisheries on each marine mammal stock, and the impact of individual fisheries on each stock. The approach is based on consideration of the rate, in numbers of animals per year, of incidental mortalities and serious injuries of marine mammals due to commercial fishing operations relative to potential biological removal (PBR) level for each marine mammal stock. The Federal Register provides the list of marine mammals that are subject to incidental mortality and serious injury as a result of fisheries interactions in the Pacific Ocean.

The impact of the proposed actions is not expected to cumulatively increase the serious injury or mortality of Pacific stocks impacted by fisheries interactions as proposed in the 2007 LOF.

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Table B-1. Summary of Annual Marine Mammal Exposure to Sub-TTS, TTS, PTS

SPECIES	LEVEL B HARASSMENT (SUB TTS AND TTS)						TOTAL HARASSMENT		
	SUBOPS	ASWEX	TRACKEX AIR	TRACKEX SUB	TRACKEX SURF53	TRACKEX SURF56	SUB TTS 173-195 dB	TTS 195-215 dB	PTS > 215 dB
Odontocetes									
Baird's Beaked Whale	0	(4)**	0	0	0	0	(4)**	0	(4)**
Bottlenose Dolphin	0	387	0	0	153	6	516	30	0
Common Dolphin	3,823	51,219	58	258	16,681	683	69,258	3,464	8
Cuvier's Beaked Whale	0	(128)**	0	0	(90)**	0	(208)**	(10)**	(218)**
Dall's Porpoise	0	39	0	0	100	6	142	3	0
Dwarf Sperm Whale	0	0	0	0	0	0	0	0	0
False Killer Whale	0	0	0	0	16	0	16	0	0
Killer Whale	0	13	0	0	0	0	12	1	0
Mesoplodon spp.	0	0	0	0	0	0	0	0	0
No. Right Whale Dolphin	69	2,713	0	6	426	16	3,003	227	0
Pacific White-sided Dolphin	137	1,370	0	6	510	27	1,949	101	0
Pantropical Spotted Dolphin	0	0	0	0	536	11	547	0	0
Pygmy Sperm Whale	0	761	0	0	148	6	859	56	0
Risso's Dolphin	137	1,314	0	6	657	32	2,050	96	0
Rough Tooth Dolphin	0	0	0	0	0	0	0	0	0
Short Finned Pilot Whale	0	0	0	0	0	0	0	0	0
Sperm Whale*	0	47	0	0	16	0	59	4	0
Striped Dolphin	0	1032	0	0	583	11	1,554	72	0
Ziphiid Whales	0	(41)**	0	0	(11)**	0	(49)**	(3)**	(52)**

SPECIES	LEVEL B HARASSMENT (SUB TTS AND TTS)						TOTAL HARASSMENT		
	SUBOPS	ASWEX	Tracking Operation AIR	Tracking Operation SUB	Tracking Operation SURF53	Tracking Operation SURF56	SUB TTS 173-195 dB	TTS 195-215 dB	PTS > 215 dB
Mysticetes									
Blue Whale*	69	221	0	6	37	6	325	14	0
Bryde's Whale	0	2	0	0	0	0	2	0	0
Fin Whale*	137	67	0	11	47	11	263	10	0
Gray Whale	0	0	0	0	58	6	64	0	0
Humpback Whale*	0	11	0	0	16	6	33	0	0
Minke Whale	0	20	0	0	6	0	24	2	0
North Pacific Right Whale*	0	0	0	0	0	0	0	0	0
Sei Whale*	0	2	0	0	0	0	2	0	0
Pinnipeds									
California Sea Lion	0	0	0	0	0	0	0	0	0
Northern Elephant Seal	0	0	0	0	0	0	0	0	0
Pacific Harbor Seal	0	0	0	0	6	0	6	0	0
Totals	**4,372**	**59,218**	**58**	**293**	**19,996**	**827**	**80,684**	**4,080**	**(282)****

* Represents ESA-listed species.

** All predicted Level B exposures for beaked whales are counted as Level A.

DEPARTMENT OF DEFENSE
DEPARTMENT OF THE NAVY

FINDING OF NO SIGNIFICANT IMPACT AND FINDING OF NO SIGNIFICANT HARM TO THE ENVIRONMENT FOR THE PROPOSED COMPOSITE TRAINING UNIT EXERCISES (COMPTUEX) AND JOINT TASK FORCE EXERCISES (JTFEX) ENVIRONMENTAL ASSESSMENT/OVERSEAS ENVIRONMENTAL ASSESSMENT (EA/OEA)

Pursuant to Section 102 (2) (c) of the National Environmental Policy Act (NEPA) of 1969 and the Council on Environmental Quality regulations at 40 Code of Federal Regulations Parts 1500-1508, implementing procedural provisions of NEPA, and Executive Order 12114, Environmental Effects Abroad of Major Federal Actions, the Department of the Navy gives notice that an Environmental Assessment/Overseas Environmental Assessment (EA/OEA) has been prepared. Based upon a Finding of No Significant Impact/Finding of No Significant Harm (FONSI/FONSH), neither an Environmental Impact Statement (EIS) nor an Overseas Environmental Impact Statement (OEIS), is required for the implementation of Composite Training Unit Exercises (COMPTUEXs) and Joint Task Force Exercises (JTFEXs) at existing military test and training ranges, installations/bases, and operating areas in the southwest United States and offshore of Southern California from February 2007 through January 2009.

* * * * *

The EA/OEA also analyzed potential impacts to marine mammals under the Marine Mammal Protection Act (MMPA). No effects on the annual rates of recruitment

or survival of marine mammal species or stocks, including strategic or depleted stocks, are expected as a result of the estimated incidental harassment of marine mammals associated with the use of mid-frequency active sonar during the exercises. Based on the widely dispersed geography of the operations and evaluation of the potential for physiological and behavioral disturbance, coupled with the reduction of potential effects as a result of the robust protective measures to be executed, the EA/OEA analysis indicates that only temporary effects (Level B harassment incidents) are anticipated for a majority of species, with potential for injury (Level A harassment incidents) limited to common dolphin, and, by policy, beaked whale species. These harassment incidents were analyzed in the context of each species and stock, finding that the proposed COMPTUEX/JTFEX training events would have no adverse effects on the annual rates of recruitment or survival for marine mammal species or stocks. There are no predicted marine mammal sonar exposures that would result in serious injury or mortality.

* * * * *

Based on the information analyzed during preparation of the COMPTUEX/JTFEX EA/OEA, the Commander, U.S. Pacific Fleet finds that the implementation of seven COMPTUEXs and seven JTFEXs at existing military test and training ranges, installations/bases, and operating areas in the southwest United States and offshore of Southern California from February 2007 through January 2009 will not have a significant impact or cause significant harm to the environment, and as a result, an Environmental Impact Statement/Overseas Environmental Impact Statement need not be prepared. There-

fore, pursuant to NEPA and EO 12114, respectively, the Navy concludes with Findings of No Significant Impact and No Significant Harm to the Environment, for the Proposed Action. The Proposed Action is hereby implemented.

Copies of the COMPTUEX/JTFEX EA/OEA and FONSI addressing this action are available by written request to: Naval Facilities Engineering Command-Southwest, Attn: Ann Rosenberry, 2730 McKean St, Bldg. 291, San Diego, CA 92136, or at the website www.NavyDocuments.com.

2/12/07 /s/ C.J. MOSSEY
Date C. J. MOSSEY
Rear Admiral, CEC, U.S. Navy
Pacific Fleet Civil Engineer

DEPARTMENT OF DEFENSE

Department of the Navy

Decision Memorandum Accepting Alternative Arrangements for the U.S. Navy's Southern California Operating Area Composite Training Unit Exercises (COMPTUEXs) and Joint Task Force Exercises (JTFEXs) Scheduled To Occur Between Today and January 2009

AGENCY: Department of the Navy, DoD.

ACTION: Notice of Decision Memorandum.

SUMMARY: The Department of the Navy announces its decision to accept alternative arrangements approved by the Council on Environmental Quality (CEQ) pursuant to 40 CFR 1506.11 for implementing the procedural provisions of the National Environmental Policy Act (NEPA), 42 U.S.C. 4321 *et seq.*, for the Navy's Southern California (SOCAL) Operating Area Composite Training Unit Exercises (COMPTUEXs) and Joint Task Force Exercises (JTFEXs) scheduled to occur between today and January 2009.

SUPPLEMENTARY INFORMATION: The text of the entire Decision Memorandum is provided as follows:

On January 10, 2008, the Department of the Navy (Navy) sought Council on Environmental Quality (CEQ) approval of alternative arrangements pursuant to 40 CFR 1506.11 for implementing the procedural provisions of the National Environmental Policy Act, 42 U.S.C. 4321 *et seq.* (NEPA), for MFA sonar training during the remaining five COMPTUEXs and four JTFEXs scheduled to occur between today and January 23, 2009, in the Southern California (SOCAL) Operating

Area. On January 11, 2008, the Navy reaffirmed its request. On January 15 CEQ concluded consultation and approved alternative arrangements pursuant to 40 CFR 1506.11 for implementing the procedural provisions of (NEPA). This memorandum documents the Navy's decision to accept the alternative arrangements.

Background

Framework

NEPA: NEPA requires Navy to undertake an assessment of the environmental effects of its proposed actions prior to making decisions. The CEQ Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act provide for situations when emergency circumstances make it necessary to make decisions and take action with significant environmental impact without observing the provisions of the CEQ Regulations (40 CFR § 1506.11). Specifically, the agency should consult with CEQ about alternative arrangements for actions necessary to control the immediate impacts of the emergency.

Title 10: The Fleet Response Training Plan (FRTP) is one of the processes used to ensure the Chief of Naval Operation's (CNO) obligation under Section 5062 of Title 10 of the U.S. Code, which requires organization, training and equipping of all naval forces for combat. The FRTP is an arduous training cycle that ensures Navy forces achieve the highest possible readiness levels prior to deployment. As part of the FRTP, the Navy conducts COMPTUEXs and JTFEXs to achieve required Navy capabilities and missions in support of combatant commander and Navy requirements. Both JTFEX and COMPTUEX exercises are included in the integrated

phase of training for U.S. and some allied forces, which requires a synthesis of unit and staff actions into a coordinated Strike Group necessary for surge and readiness certification.

The Vital Importance of Training with Mid-Frequency Active (MFA) Sonar during These Major Exercises: Anti-submarine warfare (ASW) is the Pacific Fleet's #1 war-fighting priority and critical to our national defense. Today's modern, quiet diesel-electric submarines employ state-of-the-art sound silencing technologies and sound isolation technologies. Additionally, they operate advanced propulsion systems that include high endurance battery systems and air-independent propulsion systems. These advances, combined with special hull treatments that significantly dampen submarine noise and reduce vulnerability to active sonar prosecution, make them highly potent adversaries. Diesel-electric submarines so equipped can covertly operate in coastal and open ocean areas, blocking Navy access to combat zones and increasing United States vessels' vulnerability to torpedo and anti-ship missile attacks. Detecting, identifying, locating, tracking, and if necessary, neutralizing a diesel-electric submarine is vitally important to the Navy's ability to conduct operations, accomplish its missions and ultimately prevail in conflict.

Submarines are operated by numerous navies, including potential adversaries in the Asia-Pacific and Middle East areas. Navy Strike Groups are continuously deployed to these high-threat areas. These missions require being able to access and operate in waters near shore, control strategic maritime transit routes and international straits, and protect sea lines of communi-

cations supporting international commerce. In preparing for these missions, the thousands of individuals in a Pacific Fleet Strike Group must train in the use of MFA sonar in a coordinated manner in a realistic environment prior to deployment. MFA sonar is defined as an active sonar system that operates within the 1 kHz to 10 kHz frequency range. MFA sonar capability allows the Strike Group to defend itself against quiet diesel-electric submarines that may come within range or attack any of the ships in the Strike Group. Training in the use of MFA sonar in the COMTUEX and JTFEX exercises is a vital component of certification and employment of these assets in support of national security interests around the globe. The five COMPTUEXs and four JTFEXs scheduled to occur between today and January 23, 2009, in the Southern California (SOCAL) Operating Area are the only opportunities for these Strike Groups to achieve their required combat training.

The SOCAL Operating Area is uniquely suited to conducting the Navy COMPTUEX and JTFEX because it contains all of the land, air, and at-sea bases necessary for conducting the exercises, and the shallow coastal areas in SOCAL realistically simulate areas where the Navy is likely to encounter hostile submarines. The SOCAL Operating Area includes Warning Area 291 (W-291), and the Southern California Antisubmarine Warfare Range (SOAR) that is an instrumented underwater range which allows the Navy to monitor and evaluate the success of the Strike Group training. The use of MFA sonar will be within W-291 and SOAR.

Environmental Effects: The habitat and species in the SOCAL operating area have been monitored and studied over the last 40 years, and the Navy has exten-

sively used MFA sonar in the area over the same period. Over that period, the intensity (i.e., the dB level of the sonar source) of the Navy's MFA sonar systems has remained the same. Since 1992, the Navy's use of MFA sonar in terms of the number of training hours has declined. It is emphasized that there have been no documented incidents of harm, injury, or death to marine mammals resulting from exposure to MFA sonar in the SOCAL Operating Area. There have also been no stranding incidents or population-level effects attributable to MFA sonar in the SOCAL Operating Area. No systematic declines in the stocks of marine mammals have occurred and the stocks of many species, such as humpback whales, blue whales, harbor seals, and common dolphins, are stable or improving. The Eastern North Pacific gray whale stock increased and the species was delisted, but is currently experiencing habitat changes due to sea ice melting patterns, and undersized gray whales have been reported in the media lately. Strandings of small cetaceans and California sea lions are common, usually attributed to fishery interaction, disease, or harmful algal blooms. There have also been several individual beaked whale strandings, usually attributed to disease or fishery interaction. In several of these individual strandings, the cause is unknown, but there has been no apparent link to sonar.

The Navy is evaluating the environmental impact of MFA sonar training exercises through its development of the SOCAL Range Complex environmental impact statement (SOCAL EIS). The Navy began the SOCAL EIS process in late 2006 and published its notice of intent on December 21, 2006. That EIS will meet the procedural requirements of NEPA for all training, includ-

ing MFA sonar training in SOCAL. To comply with NEPA procedural requirements, while developing the EIS, the Navy prepared an environmental assessment of the SOCAL training proposed for the time period prior to completion of the EIS. In addition, the Navy issued a consistency determination per the procedural requirements of the Coastal Zone Management Act (CZMA), 16 U.S.C. 1451 *et seq.*

In January 2007, the Deputy Secretary of Defense issued a National Defense Exemption (NDE) under the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1371(f)). The NDE provides for protection of marine mammals, in the absence of an MMPA Letter of Authorization, by including 29 specific conditions to minimize potential impacts on marine mammals. These 29 mitigation measures were developed in coordination with the National Marine Fisheries Service (NMFS), the agency with substantive responsibility for marine mammals. The NDE provides the Navy the ability to execute the plan coordinated with the Department of Commerce to obtain a Letter of Authorization under the usual procedural requirements of the MMPA. The plan requires the Navy to come into compliance with the MMPA as part of the SOCAL EIS process which will be completed when the NDE expires on January 23, 2009. The potential effects of MFA sonar training on threatened and endangered marine mammals were further analyzed in consultation with NMFS under section 7 of the Endangered Species Act (ESA), 16 U.S.C. 1531 *et seq.* In February of 2007, the Navy concluded consultation with NMFS, which issued a Biological Opinion on February 9, 2007. NMFS issued a Biological Opinion that includes an incidental take statement that exempts the Navy

from the prohibitions in section 9 of the ESA through January 2009. The Biological Opinion found that the Navy's actions were not likely to result in jeopardy to any listed species nor adversely modify any designated critical habitat, and includes an incidental take statement that exempts the Navy from the prohibitions in section 9 of the Endangered Species Act through January 2009.

For the planned exercises, the Navy conducted acoustic propagation modeling and effects analysis and determined that there would be no permanent physical effects on marine mammals from MFA sonar exposure. The NMFS further reviewed the environmental effects and found any potential behavioral or physiological effects would be temporary effects to individual marine mammals.

In January 2008, NMFS further reviewed the environmental effects of Navy training exercises in SOCAL on marine mammals in and adjacent to SOCAL, determining that while there is some potential for injury, the mitigation measures employed as a result of the NDE and the reporting and monitoring measures outlined in the Biological Opinion will minimize that risk to marine mammals in and adjacent to the exercise area. The review concluded that NMFS does not expect the COMPTUEX and JTFEX exercises through January 23, 2009 to result in adverse population level effects for any of the marine mammal populations.

Nature and Scope of the Emergency: The use of MFA sonar is complex and requires constant training to achieve and maintain combat proficiency and effectiveness. MFA sonar is the Navy's best means of detecting

potentially hostile diesel-electric submarines. The primary Strike Group targets of hostile submarines are the Navy's aircraft carriers, which typically carries over 5,300 personnel and the Amphibious Assault Ship carry the Marine Expeditionary Unit. Thus, the inability to train effectively with MFA sonar literally puts the lives of thousands of Americans at risk. If a Strike Group does not gain proficiency in MFA sonar, and cannot be certified as combat ready, the national security implications would be enormous. This harm compounds quickly if additional Strike Groups cannot be certified.

On August 7, 2007, the U.S. District Court for the Central District of California in *Natural Resources Defense Council* v. *Winter* (CV 07–335) issued an order enjoining all MFA sonar use during the Navy's remaining SOCAL Operating Area COMPTUEXs and JTFEXs scheduled to occur through January 2009. This order was stayed by an emergency panel of the Ninth Circuit Court of Appeals on August 31, 2007, pending full hearing of the Navy's appeal of the injunction. On November 13, 2007, a different panel of the Ninth Circuit ruled on the appeal, finding that the District Court had abused its discretion, leaving the stay in place long enough for the Navy to complete an ongoing exercise, and then reinstating the August 7 injunction until the District Court issued a new, tailored injunction "under which the Navy may conduct its training exercises." The panel set a deadline of January 4, 2008, for the District Court to issue the tailored injunction.

On January 3, 2008, the District Court issued a new preliminary injunction that bars any training with MFA sonar within 12 nautical miles of the California coastline or anywhere in the Santa Catalina basin, except that

Navy can use MFA sonar in the San Clemente Island Range Complex if the location is at least 5 nautical miles from the western shore of San Clemente Island. The new injunction also imposed a 2,200 yard (2,000 meter) sonar shutdown zone for ships, sonobuoys, and helicopters; 6 decibel (dB) power down when surface ducting conditions are detected regardless of the presence of marine mammals; 60 minutes of monitoring each day before use of MFA sonar; two dedicated (no other duties) NOAA- and NMFS-trained lookouts during MFA sonar use; use of passive acoustic monitoring to the maximum extent practicable; and aerial monitoring 60 minutes before and during MFA sonar exercises. The aerial monitoring included at least one dedicated aircraft. Helicopters must monitor for marine mammals for 10 minutes before use of dipping sonar. Finally, Navy must continue to comply with all 29 mitigation measures required by the NDE under the MMPA issued on January 23, 2007, unless superseded by one or more of the restrictions imposed by the court.

On January 10, 2008, the District Court modified the new injunction to "correct clerical errors and omissions." The court ordered that (1) the 2,200 yard shutdown zone does not apply to dolphins or porpoises that are "bow riding"; (2) dedicated monitoring aircraft are no longer required during the entire exercise (Navy aircraft engaged in the exercise are now sufficient); and (3) the requirement to reduce power by 6 dB when surface ducting conditions are present only apply when "significant" surface ducting conditions are present. These changes left the 2,200 yard shutdown requirement in place.

Accounting for the court's recent changes to the new injunction made on January 10, 2008, the order's training restrictions, in particular the unaltered 2,200 yard shut down requirement and 6 dB power down when significant surface ducting conditions are present, create a significant and unreasonable risk that Strike Groups will not be able to train effectively and certify as fully mission capable. The COMPTUEXs and JTFEXs scheduled to occur in the SOCAL operating area this month through January 2009 enable critical training. Effective MFA sonar training is necessary to certify Strike Groups for deployment in support of world-wide operational and combat activities.

While the Navy continues to prepare the SOCAL EIS that will analyze potential effects to marine mammals from exposure to MFA sonar, including use during COMPTUEXs and JTFEXs, it cannot delay this critical training and subsequent certification. The inability to conduct effective MFA sonar training and certify Strike Groups constitutes an emergency with significant consequences to the national security of the United States. Therefore, based upon the court's preliminary determination as to the need for the Navy to prepare an EIS that analyzes MFA sonar exposure effects during these exercises, per the provisions of 40 CFR 1506.11, the Navy initiated consultation with CEQ and requested alternative arrangements.

The Navy's request that CEQ provide for alternative arrangements for NEPA compliance was limited to the Navy's proposed use of MFA sonar during Commander THIRD Fleet's nine (9) training exercises, 4 COMPTUEXs and 5 JTFEXs, in the SOCAL Operating Area. The Navy affirmed that any alternative arrangements

would remain in effect during the preparation and completion of the SOCAL EIS or until January 23, 2009, whichever is earlier. Applying these alternative arrangements to any other area or exercise would not be appropriate absent an analysis tailored to such other area and exercise.

Alternative Arrangements

The Navy accepts the alternative arrangements prescribed by CEQ for the remaining MFA sonar training exercises in the SOCAL Operating Area between today and January 23, 2009.

Mitigation Measures: The Navy will adhere to 29 mitigation measures developed in cooperation with NMFS. These mitigation measures were developed and included as an integral part of the NDE under the MMPA invoked by the Deputy Secretary of Defense under Title 16, Section 1371(f) of the U.S. Code on January 23, 2007. That exemption applies to all Department of Defense (DoD) military readiness activities employing MFA sonar during major exercises or within established DoD maritime ranges or established operating areas through January 23, 2009.

The Navy's proposed use of MFA sonar during the Commander THIRD Fleet's proposed nine training exercises (four COMPTUEXs and five JTFEXs), in the SOCAL Operating Area is based on the current knowledge of the SOCAL Operating Area and the 29 NDE mitigation measures, some of which are more fully described below:

The Navy will continue to ensure that watchstanders and lookouts will include at a minimum: (1) three non-

dedicated watchstanders on all surface ships required to look out for marine mammals during all exercises; and (2) two lookouts on all surface ships required to look out for marine mammals during all exercises. Furthermore, all sightings of marine mammals by all watchstanders and all lookouts will be reported directly to the Combat Information Center (CIC) or via the appropriate watch stations for submission to the CIC, and the CIC will disseminate the sighting information to all platforms in the area with a recommendation for appropriate action (e.g., power down sonar; surface or subsurface vessels to avoid area or increase distance from mammals; aerial platforms to increase vigilance). Similarly, all aerial platforms will monitor the area for marine mammals during their assigned missions and report marine mammal presence and confirmed sightings to Aircraft Control Unit for submission to the CIC, and the CIC will disseminate the sighting information to all platforms in the area to ensure they are aware of the presence of marine mammals and can take steps to increase vigilance or execute mitigation measures applicable to these exercises (e.g., power down sonar; surface or subsurface vessels to avoid area or increase distance from mammals; aerial platforms to increase vigilance).

The Navy will continue to submit after action reports (AARs) to NMFS 120 days after the conclusion of any COMPTUEX or JTFEX that contain: (1) an assessment of the mitigation and monitoring measures and how to improve them; and (2) the results of marine mammal monitoring, including all instances where marine mammals were observed and the levels of MFA sonar to which they were exposed, based on the NDE

sonar mitigation measures and the requirements of the Biological Opinion dated February 9, 2007.

Use of MFA sonar in the SOCAL Operating Area for COMPTUEX and JTFEX training will occur in W-291 and SOAR. The training exercises in SOAR will occur at least 5 nautical miles away from the western shoreline of San Clemente Island. Aside from San Clemente Island, there are no other islands located within W-291 or SOAR. The Channel Islands National Marine Sanctuary is located entirely outside of W-291 and SOAR.

The Navy will use meters rather than yards to describe the safety zone set forth in NDE mitigation measure 20, and the safety zone used in the SOCAL Operating Area will be 1000 meters. The Navy will power down 6dB if a marine mammal is detected within the safety zone. The Navy will power down an additional 4 dB at 500 meters and will shut off sonar transmissions at 200 meters. The remaining features of the safety zone described in NDE measure 20 will remain the same.

Public Participation: The Navy will ensure active public participation during the development of the SOCAL EIS and all other range EISs underway and scheduled for completion in 2008 that analyze MFA sonar effects. For the SOCAL EIS, the Navy will release the draft EIS (DEIS) for public review in early April 2008 with a public comment period of 45 days that will span the month of April and extend to mid-May. In addition to publication of the Notice of Availability by the Environmental Protection Agency (EPA) in the **Federal Register**, the Navy will publish a Notice of Availability in three local California newspapers: San Diego Union

Tribune, North County Times (San Diego County), and The Press-Telegram (Long Beach).

The Navy will mail a postcard to all those who attended scoping meetings and those who submitted comments or requested copies of the DEIS. The postcard will announce availability of the DEIS and provide information on how and where to obtain copies. Three public hearings will be held in or near the following California communities: Coronado, Oceanside, and Long Beach. The locations of the meetings will be publicly announced in the **Federal Register**, the California newspapers San Diego Union Tribune, North County Times (San Diego County), and The Press-Telegram (Long Beach) and posted on the Web site *http://www.socalrangecomplexeis.com* at least 15 days beforehand.

Copies of the DEIS will also be available at four libraries in Southern California—the San Diego Central Library, the Coronado Public Library, the San Clemente Library, and the San Pedro Regional Branch Library—and at *http://www.socalrangecomplexeis.com*. The DEIS will be accompanied by fact sheets (presently under development) that will address the proposed action (including the use of MFA sonar during these exercises), marine mammals in the Range Complex, and major events (including these major exercises). These fact sheets will track with facts made available during the public scoping process. The DEIS will be distributed to federal, state, and local elected and tribal officials and government and tribal agencies, non-governmental organizations (NGOs), and citizens, many of whom participated in the scoping process. NGOs on the distribution list include those known to have an interest in the ocean, ocean resources, or use of sonar and its effects on ma-

rine animals, including recreationists, sport and commercial fishing groups, environmental interest organizations, chambers of commerce, business entities, museums, and universities. In addition, prior to the public hearings, Navy will offer elected officials and agencies the opportunity to participate in briefings on the content and conclusions of the DEIS.

The Navy will provide notice of these alternative arrangements and publish this Decision Memorandum in the **Federal Register**. In addition, Navy will publish notice of these alternative arrangements in the following newspapers: (1) Los Angeles Times; (2) Sacramento Bee; (3) San Diego Union-Tribune; (4) North County Times (San Diego County); and (5) Daily Breeze (San Pedro, California).

Concurrent with the **Federal Register** notice, the Navy will include notices to the parties identified in its request to CEQ of January 10, 2008, as well as World Wildlife Fund, Nature Conservancy, National Wildlife Federation, Whale and Dolphin Conservation Society, Ocean Mammal Institute, Center for Whale Research, Consortium for Oceanographic Research and Education, National Fisheries Institute, American Sportfishing Association, Coastal Conservation Association, International Fund for Animal Welfare, American Tunaboat Association, Pacific Fisheries Management Council, Western Fish Boat Owners Association, Southern California Lobster and Trap Fisherman's Association, Southern California Trawler's Association, Morro Bay Commercial Fisherman Organization, Southern California Commercial Fishing Association, California Wetfish Producers Association, United Anglers of Southern California, Tuna Club of Santa Catalina Island, Interna-

tional Game Fish Association, Long Beach Sportfishing, Recreational Fishing Alliance, United Anglers of Southern California, United Pier & Shore Anglers of California, Scripps Research Institute, University of California at Santa Cruz, and the Applied Physics Laboratory—University of Washington.

The notices will specifically seek input on the process for reviewing post-exercise assessments and include an offer to meet jointly with Navy representatives from the office of the Assistant Secretary of the Navy (Installations & Environment) and the office of the Chief of Naval Operations, and CEQ to discuss the alternative arrangements.

CEQ will be provided copies of any notices made in accordance with the alternative arrangements and the notices will be posted on the Web site at *http://www.socalrangecomplexeis.com*.

The Navy will also provide CEQ notice of the post-exercise assessments which the Navy prepares for each exercise within 120 days of completion of each exercise (or 120 days after completion of an exercise which is reported as part of a group of exercises) to which these alternative arrangements apply. Further dissemination of the post-exercise assessments will be determined after considering input received in response to the Navy notice of alternative arrangements, and the further dissemination of the post-exercise assessments will be incorporated into the alternative arrangements.

After the conclusion of the alternative arrangements, and no later than March 23, 2009, the Navy will provide a report to CEQ on the use of the alternative arrangements that reviews the value and effectiveness of those

arrangements. Notice of the report will be provided in the **Federal Register**, the five newspapers (Los Angeles Times; Sacramento Bee; San Diego Union-Tribune; North County Times (San Diego County); and Daily Breeze (San Pedro, California)) and on the Web site at *http://www.socalrangecomplexeis.com*.

Adaptive Management: Under the NDE, the Navy will continue to submit to NMFS's Office of Protected Resources (OPR) a report, within 120 days of the completion of major exercises, containing a discussion of the nature of effects on marine mammals from exposure to MFA sonar, if observed, based upon both modeled results of real-time events and sightings of marine mammals.

The Navy also consulted under the ESA with NMFS regarding the effects of its sonar activities for these exercises on listed species. NMFS issued a Biological Opinion finding that the Navy's actions were not likely to result in jeopardy to any listed species nor adversely modify any designated critical habitat. The Navy will continue to adhere to monitoring and reporting requirements specified in the Biological Opinion.

The Navy will continue to meet the requirements set out in the NDE for AARs. To accelerate and improve the information on marine mammal exposure effects or lack of effects, the Navy will modify its reporting and recordation processes to enable a more comprehensive analysis of impacts to marine mammals (including beaked whales that are not listed under the ESA) and ASW training during these major exercises and integrate these modifications into the reports prepared on the exercises conducted between March 1, 2008, and

January 23, 2009. The reporting and monitoring program improvements identified using adaptive management principles will also inform the EIS process for the SOCAL Range Complex.

Research Measures: Efforts to obtain more information about the quantity, distribution, migration, and reactions of marine mammals to MFA sonar is ongoing and will continue. Consequently, information being obtained will inform compliance with the substantive provisions of the MMPA and ESA, and the procedural requirements of CZMA and NEPA. For NEPA, this information will inform the ongoing SOCAL EIS process as well as future exercise planning in the SOCAL Operating Area and serve to provide the basis for integrated compliance with all environmental statutes.

The Navy will continue to implement the following research measures to provide for continual improvement in the quality of information available:

The Navy will continue to improve information regarding marine mammal presence and density in the SOCAL Operating Area by coordinating with NMFS to determine the need to identify areas within the SOCAL Operating Area for additional marine mammal surveys. If a need is identified, an implementation plan identifying the areas and providing a schedule for the surveys will be developed no later than July 2008. The surveys will be designed to help determine where and when there are concentrations of marine mammals in the SOCAL Operating Area. The survey will occur over a two-year period through July 2010.

The Navy will continue to work on a program that will enhance its ability to use passive hydrophones on

the SOAR Instrumented Range to detect and track marine mammals on those portions of the range where the passive hydrophones are in place. To ensure that these efforts remain focused, the Navy will develop an implementation plan and schedule to expand the technical capability of existing hydrophones to detect marine mammals by April 4, 2008. The implementation plan should provide for completion of prototype classifiers for Cuvier's and Blainesville's beaked whales and visual verification of other small odontocetes detected by passive hydrophones by April 15, 2009.

As part of the SOCAL EIS, the Navy is evaluating a proposal to extend the range areas monitored by passive hydrophones. If Navy decides to extend the area covered by passive hydrophones as part of its ROD for the SOCAL EIS, the Navy will determine a timetable for acquisition and installation of additional hydrophones by March 30, 2009.

The Navy is evaluating current research regarding infrared (IR) technology for use in collecting data regarding marine mammals, assessing the feasibility of acquiring and deploying additional IR capabilities during major exercises or for conducting surveys, and developing a plan for acquiring and deploying IR in data collection efforts. The plan will be published no later than June 15, 2008.

Dated: January 15, 2008.

Donald C. Winter,
Secretary of the Navy.

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W 10b

ADOPTED STAFF RECOMMENDATION ON CONSISTENCY DETERMINATION

Consistency Determination No.	**CD-086-06**
Staff:	MPD-SF
File Date:	10/30/06
60th Day:	12/29/06
75th Day:	1/13/07
Commission Meeting:	1/10/07

FEDERAL AGENCY: **U.S. Navy**

PROJECT LOCATION: Four Navy operating areas: Southern California operating area (Exhibits 1-2), San Clemente Island Range Complex, Marine Corps Base Camp Pendleton, and Silver Strand Training Complex (Exhibits 1-3)

PROJECT DESCRIPTION: Onshore and offshore U.S. Pacific Fleet military training exercises

SUBSTANTIVE FILE DOCUMENTS: See page 38.

EXECUTIVE SUMMARY

The U.S. Navy (Navy) has submitted a consistency determination for the U.S. Pacific Fleet's offshore and onshore military training exercises in southern California. The four training areas are: the southern California operating area (Exhibit 1), San Clemente Island Range Complex, Marine Corps Base Camp Pendleton, and Silver Strand Training Complex (Exhibit 2). The exercises involve a wide range and combinations of ships, support craft, submarines, helicopters, airplanes, and amphibious vehicles, and other equipment used to train Navy and Marine forces with "complex, deployment-preparation exercises."

Many of the exercises would take place outside the coastal zone (up to 80 miles offshore). Activities within the coastal zone include Amphibious Operations, Naval Surface Fire Support, Ship Mine Countermeasures Operations, Demolition Operations, and Mining (airborne, non-explosive, mine-laying) Operations.

Potential marine environment and use issues raised by the projects are impacts to marine mammals, sea turtles, kelp beds, white abalone, commercial and recreational fishing, and recreational diving in the marine environment. Potential land habitat issues raised are impacts to sensitive bird breeding areas (e.g., snowy plovers and loggerhead shrikes) in several areas and the island night lizard on San Clemente Island. The exercises are similar to activities the Navy has been regularly undertaking for many years and do not represent

an intensification in use of the affected areas compared to past years' activities. Activities with the potential to disturb marine mammals include ship movement, inert mine drops, underwater detonations, and, outside the coastal zone, mid-frequency sonar, missile launches, and amphibious landings. Use of explosives within the coastal zone would be limited to small (mostly 1-5 lb.) charges. Mid-frequency sonar would only occur outside the coastal zone, and, for the most part, beyond 80 nautical miles from shore (off San Clemente Island).

The Navy's initial consistency determination focused on activities physically within the coastal zone; nevertheless, in response to Commission staff questions the Navy has provided additional information detailing the protection measures in place from activities outside but potentially affecting the coastal zone. Marine mammal and sea turtle protection measures include: Marine Species Awareness Training material, shipboard surveillance for marine mammals and sea turtles, aerial surveillance where planes or helicopters are part of the activity, passive acoustic monitoring, implementing a buffer zone (700 yard arc-radius around detonation sites for small explosives (mostly 1-5 pounds, with none exceeding 20 pounds)), reducing the likelihood of exposing marine mammals or sea turtles to sounds exceeding 173 decibels (dB), avoiding of dropping any inert mines on marine mammals or sea turtles, removing from the marine environment inert mines dropped pre- and post-exercise surveys, coordinating with NMFS in the event of any injury to a marine mammal or sea turtle observed and submitting monitoring reports, and providing the Commission with the monitoring reports it provides to NMFS.

However, the Navy has not provided the Commission with the level of detail needed for the Commission to fully review the proposed project and its marine resource impacts. Although the Commission has not required an analysis of possible impacts, a detailed analysis of estimated "take" down to 154 dB and for each acoustic source, the frequency range, duty cycle, acoustic intensity and distance to what the Navy had estimated as the threshold for effect, this should not be taken as a statement that it is not necessary to do so. Due to time constraints and the fact that the Commission is conditionally approving this activity with what it believes are adequate mitigation measures, the Commission has not insisted on receiving this information.

The Commission has traditionally required, as the Navy did provide for its most recent consistency determination involving active acoustics in Monterey Bay (CD-37-06 - Navy Monterey Bay (MB) 06), a detailed analysis of estimated "take" (numbers of animals affected), and for each acoustic source, the frequency range, duty cycle, acoustic intensity, and distance to what the Navy had estimated as the threshold for effect (although, as noted below, both NMFS and the Commission determined lower thresholds were needed than what the Navy had originally proposed). While the subject proposal is not a new activity in these waters, this is the first opportunity the Commission has had to review issues related to mid-frequency sonar since concerns were raised in the Bahamas, Haro Strait, Hawaii, and other coastal areas in recent years.

In the subject case, NMFS has not yet completed its review; however NMFS most recent Incidental Harassment Authorization for Navy training in Hawaii involv-

ing mid-frequency sonar (RIMPAC) expressed an approach that would consider 190 dB as a Temporary Threshold Shift "take" threshold, and 173 dB as a behavioral harassment "take" threshold.

As it found during the review of CD-037-06, the Commission believes that a lower threshold than articulated by NMFS is warranted. NMFS appears to have taken a "middle ground" approach, noting that available evidence exists to support a lower threshold, but basing its determination on the level at which 25% of mammals were behaviorally affected in a captive dolphin study (Finneran and Schlundt (2004)). As the Commission noted in CD-037-06, the Nowacek study (Exhibit 10), which NMFS cited but did not base its threshold on, supports reliance on a lower threshold, given that it addresses animals not in captivity (and not trained to expect rewards). Also, the Natural Research Council has expressed concerns (see pages 29-32) over reliance solely on studies of captive animals. Given this information, combined with the paucity of data concerning the effects of anthropogenic sound on marine species, and the difficulty in detecting marine mammals and sea turtles, a compelling case exists that a lower threshold is warranted. Therefore, the Commission reiterates its finding from CD-037-06: "While the Commission agrees that the movement from a single to a dual criteria is a step in the right direction, the Commission does not believe the Navy has established a basis for its proposed [in that case]186 dB threshold. An equivalent if not better case can be made for adopting what Woods Hole Oceanographic Institution has suggested (i.e., a more precautionary 154 dB threshold)." Consequently, the Commission believes the conditions on pages 10-13,

which include implementation of a lower threshold, as well as other measures to protect marine mammals and sea turtles, are needed to bring the project into consistency with the marine resource policy of the Coastal Act (Section 30230). These conditions would require the Navy to:

implement safety zones out to the 154 dB (received level (RL), expressed in decibels (re 1 μPa2 ·s));

include two dedicated NOAA-trained observers at all times during use of mid-frequency sonar;

provide adequate, NMFS approved training for the monitors;

include Passive Acoustic Monitoring and use it to enforce the safety zones;

perform aerial monitoring;

avoid, where possible, effect on gray whales, the Channel Islands National Marine Sanctuary, and areas with known high concentrations of marine mammals, and complex, steep seabed topography (except on the Navy's instrumented range off San Clemente Island);

additional measures for night and low visibility conditions, during Surface Ducting Conditions, and for Choke-point exercises;

to the degree possible, retrieval of inert mine shapes dropped; and

as agreed to previously, submit all monitoring results provided to NMFS (unless classified) to the Commission staff; and

implement pre-exercise monitoring one-half hour before sonar use.

Only as conditioned, would the proposed training exercises be consistent with the applicable marine resource, water quality, and fill of open coastal waters policies (Sections 30230, 20331, and 30233) of the Coastal Act.

For land-based species, because the activities are similar to past training exercises, the Navy is relying on mitigation measures developed through its Endangered Species Act consultations with the U.S. Fish and Wildlife Service and contained in several existing Biological Opinions. These agreements include measures to protect loggerhead shrikes and island night lizards on San Clemente Island for Naval Surface Fire Support activities, and snowy plovers at Camp Pendleton and the Silver Strand peninsula for amphibious landing activities. These measures are adequate to find the project consistent with the environmentally sensitive habitat policy (Section 30240) of the Coastal Act.

Measures to minimize impacts to boating, diving and fishing activities include publishing Notices to Mariners, limiting operations offshore of San Clemente Island to Federally-designated danger and restricted zones, temporary closures of other affected areas, avoiding operations if boats or divers do not leave the area, and limiting amphibious landings to restricted military beaches already off-limits to the public. With these measures, the proposed exercises would be consistent with the commercial and recreational fishing and diving policies and public access and recreation policies (Sections 30234, 30234.5, 30210, and 30212) of the Coastal Act.

As provided in 15 CFR § 930.4(b), in the event the Navy does not agree with the Commission's conditions of concurrence, then all parties shall treat this conditional concurrence as an objection.

STAFF SUMMARY AND RECOMMENDATION

I. STAFF SUMMARY:

A. **Project Description**. The Navy has submitted a consistency determination for a series of offshore and onshore military exercise used to train the U.S. Pacific Fleet in southern California both onshore and in offshore waters. The four training areas are: the southern California operating area, San Clemente Island Range Complex, Marine Corps Base Camp Pendleton, and Silver Strand Training Complex (Exhibits 1-2). The exercises, which have been conducted in various forms since the 1920s, are used to train Navy and Marine forces with "complex, deployment-preparation exercises" involving "varied land, sea, and undersea training environments to properly demonstrate the full range of capabilities required of deploying naval forces."

The exercises are separated into three, increasingly complex phases, which the Navy calls: "Basic, Integrated and Sustainment." The Navy calls the latter two phases "COMPTUEX," standing for Composite Training Unit Exercises, and "JTFEX," standing for Joint Task Force Exercises.

The exercises would involve troops from bases in three states (California, Arizona and Nevada (Exhibit 1)), which would form "Strike Groups." Strike Groups are either: (a) a Carrier Strike Group (CSG) (normally formed around an Aircraft Carrier (CV/N), with an em-

barked Air Wing (CVW)); or (b) an Expeditionary Strike Group (ESG) (formed around an Amphibious Helicopter Carrier (LHD), with an embarked Marine Expeditionary Unit (MEU)). Both types of groups would also involve a number of support ships. CSG exercises are offshore; only ESGs would involve bring troops ashore (either by helicopter or amphibious vehicle).

The Navy elaborates:

> *A COMPTUEX is conducted as a series of scheduled training events that occur according to a given time schedule against an opposition force. The COMPTUEX provides an opportunity for the Strike Group to become proficient in the myriad of required warfare skill sets. Additionally, it stresses the integration or coordination of the different warfare areas and provides realistic training on in-theater operations. The COMPTUEX is normally more structured than the JTFEX, so it is longer in duration.*
>
> *JTFEX is in the Sustainment or final Phase of the FRTP and may involve either a CSG or an ESG. It is a scenario-driven, at-sea training exercise designed to evaluate the Strike Group's preparedness for forward deployed contingency and combat operations. JTFEX also utilizes a simulated opposition force and serves as the venue for U.S. THIRD Fleet to assess the readiness, interoperability, and proficiency of naval forces in realistic, free-play scenarios, ranging from military operations other-than-war to armed conflict. As the final certification event of the FRTP, the Strike Group must demonstrate the ability to operate and integrate into a*

Joint Operations Area under simulated austere, hostile conditions.

Most of the training would occur outside the coastal zone on federal land or in federal waters. The Navy's consistency determined examined those exercises within or with the potential to affect the coastal zone. Exercises outside the coastal zone are listed and briefly summarized in Exhibit 3. (The asterisks (*) in the list below denote those activities the Navy believes has the potential to affect the coastal zone. The acronyms stand for the four operating areas (OPAREAs): SOCAL, SCIRC, SSTC, MCBCP - southern California operating area, San Clemente Island Range Complex, Silver Strand Training Complex, and Marine Corps Base Camp Pendleton, respectively).

Table 1-2. COMPTUEX/JTFEX Activities Inside the Coastal Zone

EVENT	RANGE/OPAREA
Amphibious Exercise*	SCIRC, SSTC, MCBCP
Ship Mine Countermeasures Exercise*	SCIRC, SSTC, MCBCP
Demolition Operations*	SCIRC, SSTC, MCBCP
Visit Board Search and Seizure	SOCAL
Naval Cooperation and Guidance for Shipping	SOCAL
Maritime Security Operations	SOCAL
Naval Surface Fire Support*	SCIRC, SOCAL
Straits Transit/Q Route	SOCAL
Fast Inshore Assault Craft	SOCAL
Dynamic STRIKE/TSS	SCIRC

Close Air Support	SCIRC, MCBCP
Counter Special Operations Force	SOCAL
Mining Exercise*	SOCAL
Surge Exercise	SOCAL
Live-Fire Exercise	SOCAL, SCIRC, MCBCP
Special Warfare Operations	SCIRC, MCBCP
Humanitarian Assistance/Disaster Relief	MCBCP
Non-Combatant Evacuation	SCIRC, MCBCP,
Embassy Reinforcement	SCIRC, MCBCP
Combat Search and Rescue Trap	SCIRC, SOCAL, MCBCP

Thus, of these activities, the Navy believes only the following five types of events have the potential to affect coastal resources: Amphibious Operations, Naval Surface Fire Support, Ship Mine Countermeasures Operations, Demolition Operations, and Mining Operations. Describing these, the Navy states:

2.2.1 At-Sea Training Operations

Amphibious Operations

Amphibious operations may include shore assault, boat raid, airfield seizure, humanitarian assistance, and force reconnaissance. Amphibious landings are launched from Navy ships positioned out to 50 mi (80 km) offshore. For an assault on a beach, units come ashore in Landing Craft, Air Cushion (LCAC) and in Amphibious Assault Vehicles (AAV)(lightly armored tracked vehicles). An amphibious exercise may last from 2 days up to 3 weeks, depending on

the size and complexity of the exercise, and typically includes a Live-Fire Exercise. Amphibious operations normally take place at MCBCP and the SCIRC. Additionally, smaller amphibious exercises have occurred on the southern beaches of the SSTC. The participants and assets in amphibious operations typically include: 1,500 Marines; rotary wing, fixed wing, and tilt-wing aircraft; amphibious vehicles, vessels, and boats - Landing Craft, Utility (LCU), Combat Rubber Raiding Raft (CRRC), Rigid Hull Inflatable Boat (RHIB); three amphibious ships; and other surface ships.

Naval Surface Fire Support (NSFS) Operations

NSFS operations involve naval surface ships with the MK-45 5-inch/54 or the MK-45 5-inch/62 naval gun firing system, engaging land and surface targets. NSFS operations are an annual requirement for all naval vessels outfitted with the 5-inch gun system. NSFS is conducted against land targets in the SHOBA on SCI. Because ships are firing from sea to land targets located in SHOBA, the public is restricted in the offshore portion of SHOBA, called Fire Support Area (FSA), during the live-firing portion of the operations. However, the cumulative time that ships are actually firing weapons during these operations is extremely short. The participants associated with an NSFS operation include: four to six ships.

Mine Countermeasures (MCM) Operations

MCM Operations train forces to locate and neutralize inert (non-explosive) mine shapes in shallow-water environments in support of the CSG and ESG.

A typical exercise would involve bottom-laid explosive and mid-water column explosive training evolutions. The training would take place offshore of the beaches at SSTC/MCBCP, and in the nearshore waters off the western side of SCI. The assets include two MCM ships, two to three airborne mine countermeasures helicopters, divers, unmanned underwater vehicles (UUV) and marine mammals (dolphins). Some or all of the following equipment would be used: underwater explosives (up to 20 pounds net explosives weight (NEW)), side-scan sonar, high-frequency sonar, laser line scans, magnetic sweep gear, and influence sweep gear.

Demolition Operations (DEMO)

DEMO provides training in the identification and neutralization or destruction of inert floating or moored mines. This training includes hydrographic reconnaissance of approaches to prospective landing beaches; demolition of obstacles and clearing mines; locating, improving, and marking of useable channels; channel and harbor clearance; and acquisition of operational intelligence during pre-assault operations. Explosives used in DEMO are less than 20 pounds. During a COMPTUEX or JTFEX there may be up to 20 demolition events. The DEMO exercise takes place at locations routinely used for explosive ordnance disposal (EOD) and DEMO training at SCIRC, MCBCP, SSTC, and Naval Base Coronado (NBC). The participants and assets typically used in this event include: EOD divers, small boats, and helicopters.

2.2.2 Air Operations

Mining Operations

Mining Operation consists of airborne mine-laying. The aircraft drop a series of (usually four), non-explosive inert training shapes (MK-76, bomb dummy unit [BDU] 45, or BDU 48) in the water. The aircraft may make multiple passes on the same flight pattern, dropping one or more shapes each pass. The shapes are scored for accuracy as they enter the water. The training shapes are inert and recovered at the end of the operation.

Describing the need for the training, the Navy also states:

1.3 PURPOSE AND NEED

The purpose of conducting COMPTUEXs and JTFEXs is to train, prepare and certify Strike Group readiness prior to deployment of forces to Combatant Commanders. The exercises incorporate a multi-dimensional, multi-threat environment that stresses all aspects of joint maritime operations.

The need for major naval exercises such as COMPTUEXs or JTFEXs is derived from the Congressional mandate to organize, train, and equip the military services for prompt and sustained combat operations (10 United States Code [U.S.C.] Sections 5032 and 5062). The COMPTUEX and JTFEX are required both to train the units and to evaluate their combat readiness. At the conclusion of the JTFEX, Commander, U.S. THIRD Fleet certifies to the Commander, Pacific Fleet that the CSG or ESG is ready

to deploy, fulfilling the Navy's Title 10 responsibilities.

B. History. As noted above, the exercises are similar in duration, intensity, and location to long-standing Navy training in the operating areas. The Navy states:

Nominally, the U.S. Navy (Navy) conducts seven COMPTUEXs and seven JTFEXs per 2-year period throughout existing major ranges and facilities in the southwestern United States and offshore Southern California (Table 1-1 and Figure 1-1 [Exhibit 1]). Dependent on national tasking, an average of three ESG COMPTUEXs, four CSG COMPTUEXs, three ESG JTFEXs, and four CSG JTFEXs, would be conducted over a 2-year period (fourteen total exercises). Beginning January 2007, the Navy proposes to conduct some of these major range events concurrently. The overall number, type, frequency, and location of these major range events would not change from current baseline operations. Southern California (SOCAL) land, sea and air ranges have supported major Fleet training dating back before the 1920's. San Clemente Island (SCI) has served as a dedicated Fleet training asset since it was transferred over to the Department of the Navy (DON) in 1934. As early as 1935, naval gunfire and bombing, and U.S. Fleet Landing exercises have occurred in the SCI Shore Bombardment Area (SHOBA) and throughout the island, respectively.

C. Federal Agency's Consistency Determination. The Navy has determined the project consistent to the maximum extent practicable with the California Coastal Management Program.

II. STAFF RECOMMENDATION:

The staff recommends that the Commission adopt the following motion:

MOTION: **I move that the Commission conditionally concur with consistency determination CD-086-06 and determine that, as conditioned, the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).**

STAFF RECOMMENDATION:

Staff recommends a **YES** vote on the motion. Passage of this motion will result in an agreement with the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

RESOLUTION TO CONDITIONALLY CONCUR WITH CONSISTENCY DETERMINATION:

The Commission hereby **conditionally concurs** with consistency determination CD-086-06 by the Navy on the grounds that the project would be fully consistent, and thus consistent to the maximum extent practicable, with the enforceable policies of the CCMP, provided the Navy agrees to modify the project consistent with the conditions specified below, as provided for in 15 CFR §930.4.

Conditions:

1. **Safety Zones.** The Navy shall adopt safety zones (i.e., marine mammal preclusion zones) out to the distance at which the sonar has attenuated to 154 dB (received level (RL), expressed in decibels (re 1 $\mu Pa^2 \cdot s$)). The Navy will monitor the area and lower sonar levels (or delay transmissions until an animal has left the safety zone) such that marine mammals and sea turtles will not be exposed to received levels greater than 154 dB. If the 154 dB level cannot be feasibly achieved, the Navy shall either cease sonar transmissions should a marine mammal be detected within 2 km of the sonar dome, as the Navy has currently agreed to for its SURTASS LFA sonar operations, or the Navy shall provide the Commission with sufficient information about the sonar intensities and attenuation rates, and the maximum capabilities of its monitoring, to enable the Commission to determine that the Navy will protect a safety zone as close as is possible to the 154 dB zone. The Navy shall provide this information to the Commission staff for review and approval by the Executive Director prior to the first exercise involving mid-frequency sonar.

2. **Surveillance.** Surveillance shall include two dedicated NOAA-trained marine mammal observers at all times during use of mid-frequency sonar.

3. **Training.** The Navy shall employ the RIMPAC-derived measures, which state:

> **NMFS-Approved Training**
>
> • Navy shipboard lookouts shall be qualified watchstanders who have completed marine species awareness training.

- Navy watchstanders will participate in marine mammal observer training approved by NMFS.

4. **Passive Acoustic Monitoring.** Passive acoustic monitoring will be used to enforce safety zones. All personnel engaged in passive acoustic sonar operations during an exercise employing mid-frequency sonar shall monitor for marine mammals and report the detection of any marine mammal to the appropriate watch station for dissemination and appropriate action.

5. **Aerial Monitoring.** The Navy shall ensure that aircraft operating in the Navy's instrumented range off San Clemente will monitor the area for marine mammals during their assigned missions and will monitor the area throughout any mid-frequency sonar exercises on the instrumented range. All other aircraft flying low enough to reasonably spot a marine mammal will watch for marine mammals. The Navy shall require that all aerial sightings of marine mammals be reported to the appropriate watch stations for appropriate action. Appropriate action means taking mitigation measures and disseminating the information to other units and watchstanders for increased situational awareness.

6. **Gray Whale Migration Season.** To the maximum extent feasible, the Navy shall locate and schedule training outside the gray whale migration season, where the sonar is near enough to known or observed gray whale migration paths to expose gray whales to sonar levels above 154 dB. If conducting exercises during the migration season the Navy shall avoid known gray whale migration corridors.

7. **Areas of High Marine Mammal Populations.** To the maximum extent feasible, the Navy shall avoid train-

ing in areas with known high concentrations of marine mammals, including but not limited to:

> avoiding active sonar transmissions within the National Marine Sanctuaries off California's coast (e.g., the Channel Islands NMS); and
>
> avoiding seamounts and coastal areas with complex, steep seabed topography, except on the Navy's instrumented range off San Clemente Island.

8. **Night and low visibility conditions.** The Navy shall employ the RIMPAC-derived measures, which state[1]:

> **Low visibility conditions (i.e., whenever the entire safety zone cannot be effectively monitored due to nighttime, high sea state, fog or other factors)** - The Navy will use additional detection measures, such as infrared (IR) or enhanced passive acoustic detection. Except in extraordinary circumstances, the Navy will power down sonar by 6 dB as if marine mammals were present in the zones it cannot see.

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[1] In fact, the U.S. Marine Mammal Commission has specifically recommended that, "given the limitations of night vision devices (based on [NMFS'] assessment in its previous Federal Register notices) and passive acoustic monitoring," the Navy observe a mandatory power-down in low-visibility conditions, assuming it cannot simply avoid them (MMC 2006). (Comments from Tim Ragen, Acting Executive Director, Marine Mammal Commission, to P. Michael Payne, Chief of the Permits Division, NMFS, on the Navy's 2006 Rim of the Pacific (RIMPAC) Exercise.)

9. Stranding Response and Reporting. The Navy shall employ the RIMPAC-derived measures, which state:

> • The Navy will coordinate with the NMFS Stranding Coordinator for any unusual marine mammal behavior, including stranding, beached live or dead cetacean(s), floating marine mammals, or out-of-habitat/milling live cetaceans that may occur at any time during or shortly after major exercises.
>
> • The Navy will provide a report to NMFS after the completion of a major exercise that includes:
>
> - An assessment of the effectiveness of these mitigation and monitoring measures with recommendations of how to improve them.
>
> - Results of the marine species monitoring during the major exercise. As much unclassified information as the Navy can provide including, but not limited to, where and when sonar was used (including sources not considered in take estimates, such as submarine and aircraft sonars) in relation to any measured received levels, source levels, numbers of sources, and frequencies, so it can be coordinated with observed cetacean behaviors. If necessary, classified information may be provided to NMFS personnel with an appropriate security clearance and need to know.

10. Surface Ducting Conditions. During significant surface ducting conditions, as defined by NMFS (2006), the Navy shall power down the sonar source by 6 dB.

The Navy shall assess whether surface ducting conditions are present at least once hourly during periods as specified by NMFS (and as discussed on page 3 of the NMFS IHA for RIMPAC (Exhibit 13)).

11. Choke-point exercises. - Prior to approving a proposed choke-point exercise, Navy commands shall consult with OPNAV N45.

- The Navy will provide NMFS (Stranding Coordinator and Protected Resources, Headquarters) with information regarding the time and place for the choke-point exercises in advance of any proposed choke-point exercise.

- The Navy and NMFS will mutually agree upon whether non-Navy observers are required.

- The Navy will coordinate a focused monitoring effort around the choke-point exercises, to include pre-exercise monitoring (2 hours), during-exercise monitoring, and post-exercise monitoring (1-2 days). This monitoring effort will include at least one dedicated aircraft or one dedicated vessel for realtime monitoring from the pre- through post-monitoring time period, except at night, with the vessel or airplane maintaining regular communication with a Tactical Officer with the authority to shutdown, power-down, or delay the start-up of sonar operations. These monitors will communicate with the Navy command to ensure the safety zones are clear prior to sonar start-up, to recommend power-down and shut-down during the exercise, and to extensively search for potentially injured or stranding animals in the area and downcurrent of the area post-exercise.

12. Mine Shape Retrieval. To the maximum extent feasible, the Navy shall retrieve inert mine shapes dropped.

13. Monitoring Reports. In addition to the above, as agreed to previously, all monitoring results provided to NMFS (unless classified) shall be submitted to the Commission staff.

14. Baseline Monitoring. The Navy shall perform pre-exercise monitoring commencing 30 minutes prior to commencement of mid-frequency sonar use.

III. APPLICABLE LEGAL AUTHORITIES.

A. Conditional Concurrences. The federal consistency regulations (15 CFR § 930.4) provide for conditional concurrences, as follows:

> *(a) Federal agencies, . . . should cooperate with State agencies to develop conditions that, if agreed to during the State agency's consistency review period and included in a Federal agency's final decision under Subpart C . . . would allow the State agency to concur with the federal action. If instead a State agency issues a conditional concurrence:*
>
> *(1) The State agency shall include in its concurrence letter the conditions which must be satisfied, an explanation of why the conditions are necessary to ensure consistency with specific enforceable policies of the management program, and an identification of the specific enforceable policies. The State agency's concurrence letter shall also inform the parties that if the requirements of paragraphs (a)(1) through (3) of the section are not met, then all parties shall treat the State agency's conditional con-*

currence letter as an objection pursuant to the applicable Subpart . . . ; and

(2) The Federal agency (for Subpart C) . . . shall modify the applicable plan [or] *project proposal, . . . pursuant to the State agency's conditions. The Federal agency . . . shall immediately notify the State agency if the State agency's conditions are not acceptable; and*

. . .

(b) If the requirements of paragraphs (a)(1) through (3) of this section are not met, then all parties shall treat the State agency's conditional concurrence as an objection pursuant to the applicable Subpart.

B. **Practicability.** The federal consistency regulations also provide:

15 CFR § 930.32: Consistent to the maximum extent practicable.

(a)(1) The term "consistent to the maximum extent practicable" means fully consistent with the enforceable policies of management programs unless full consistency is prohibited by existing law applicable to the Federal agency.

Since the Navy has raised no issue of practicability, as so defined, the standard before the Commission is full consistency with the policies of the California Coastal Management Program (CPRC §§ 30200-30265.5).

IV. FINDINGS AND DECLARATIONS:

The Commission finds and declares as follows:

A. Marine Resources/Coastal Waters/Environmentally Sensitive Habitat. The Coastal Act provides:

Section 30230: *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231: *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30240: *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent*

on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Sensitive marine species in the project areas include marine mammals and sea turtles, kelp beds, white abalone, and essential fish habitat. Potentially affected onshore species include snowy plovers at Camp Pendleton and the Silver Strand peninsula, and loggerhead shrikes and the island night lizard on San Clemente Island (Exhibits 5 & 6). The Navy's consistency determination focuses on the five types of exercises occurring within the coastal zone and having the potential to affect coastal zone resources. The Navy states:

Coastal Zone Effects

The Proposed Action would be consistent with Section 30230. Under the Proposed Action, the overall number, type and location of training operations would not increase. Biological productivity of coastal waters would be maintained and populations of fish and other marine organisms would be sustained. Important marine resources would be avoided.

Discussion

COMPTUEX/JTFEX activities within the SOCAL OPAREA with potential to affect marine resources include deployment of inert mine shapes on surface targets, sea-to-land weapons firing into designated land-based ranges, underwater detonation, and amphibious landings. Due to the generally dispersed, infrequent nature of Navy training exercises and the wide dispersal of marine resources, biological productivity of coastal waters will be maintained.

Marine resources of special biological or economic significance in the SOCAL OPAREA include:

- *Marine flora, especially kelp forests*
- *Commercial and recreational fish stocks and essential fish habitat*
- *Special-status species, including marine mammals, sea turtles, and white abalone*

These resources are considered, for this analysis, to be suitable indicators of general biological productivity, and representative of the overall marine resources within the SOCAL OPAREA.

Exhibit 4 contains the Navy's estimates of marine mammal distributions and population trends in the offshore operating areas. The Navy states:

Effects of the Proposed Action

Overview

JTFEX/COMPTUEX activities would have negligible effects on marine mammals. Minor acoustic effects to marine mammals could occur from underwater detonations and possibly include: temporary

changes in behavior, movement away from an area of activity, temporary reduction in hearing sensitivity, and no response. It is highly unlikely that a marine mammal would experience any long-term effects because the proposed training is:

- *Intermittent*
- *Localized in discreet, shallow water areas in SOCAL*
- *Mitigated, such that marine mammals will not be in proximity to underwater detonations during training events*

Underwater Detonations

Marine mammals may be exposed to acoustic energy from underwater detonations from DEMO and SMCMEX, and to physical injury from inert mine shapes dropped during MINEX. Small charges are used to neutralize inert mine shapes during DEMO and SMCMEX. Underwater detonations associated with DEMO are aimed at removing obstacles and clearing mines in areas to be used for approaches to landing beaches. Underwater detonations conducted during SMCMEX involve one bottom-laid detonation and one mid-water column detonation. While water depth is slightly greater than DEMO activities, SMCMEX activities are conducted to locate and neutralize inert mine shapes in shallow water environments. Because underwater detonations conducted during DEMO and SMCMEX occur in shallow or very shallow water, a significant portion of the energy is dissipated as surface blowout pressure and/or into the ocean substrate. In addition, bottom substrate characteristics have an affect

on the amount of energy propagating through the water column.

Characteristic of the west coast of North America, Southern California has mixed semidiurnal tides. This results in four daily tidal heights, including a low low tide, high low tide, low high tide, and high high tide. During these tides, sand and gravel from submerged portions of intertidal beaches are washed into the water column. This frequent tidal flow, combined with close proximity to erosion of sand and particulate matter from coastal dunes and hills results in a relatively deep sandy substrate in nearshore waters. Consequently, propagation of acoustic energy from these shallow water, and shallow water bottom-laid mine shapes is significantly reduced in the water column.

Operating procedures for detecting marine mammals would be implemented in conjunction with underwater detonations training. Prior to an underwater detonation (DEMO, SMCMEX) or mine laying activity (MINEX), ship-based or aerial observers would visually scan the area for marine mammals. As with sea turtles, underwater detonations or mine laying would be delayed, postponed or cancelled if a marine mammal approached the operating area; thereby, avoiding injury to marine mammals.

While marine mammals may detect the underwater detonations or sound of an inert mine shape dropping into the water from a distance, these exercises would be intermittent, and of very short duration. Underwater detonations and mine-laying would not

affect the biological productivity of marine mammal populations in the CZ. The Proposed Action is consistent to the maximum extent practicable with Section 30230 for marine resources.

Concerning water quality, the Navy states:

Coastal Zone Effects

COMPTUEX/JTFEX activities within the SOCAL OPAREA with the potential to affect biological productivity include underwater detonations from DEMO and SMCMEX. Mine shapes used in conjunction with these activities are either floating or moored mines. Small charges are used to neutralize inert mine shapes. Underwater detonations associated with DEMO are aimed at removing obstacles and clearing mines in areas to be used for approaches to landing beaches. Because these underwater detonations occur in very shallow water, a significant portion of the energy is dissipated as surface blowout pressure; thereby, reducing affects to water quality and plankton communities in the water column. Underwater detonations conducted during DEMO and SMCMEX would not be conducted in kelp forests surrounding SCI.

Due to the generally dispersed, infrequent nature of underwater detonations, small charges used, significant tidal flow (particularly around SCI), discreet effects associated with underwater detonations, and the wide dispersal of marine resources, biological productivity of coastal waters will be maintained. The Proposed Action is consistent to the maximum extent practicable with Section 30231.

The Commission notes that the proposed training exercises are similar to activities the Navy has been regularly undertaking for many years and do not represent an intensification in use of the affected areas compared to past years' activities. However the Commission takes a broader view than the Navy as to which activities may affect the coastal zone. Many of the species covered potentially affected by the proposed training activities spend some portions of their life cycles within coastal waters (e.g., birds that fly in and out of the coastal zone and marine species that swim in and out of the coastal zone) (see Exhibit 7, NOAA letter to CCC, March 10, 1995). Without adequate avoidance and mitigation measures, a greater number of exercises than those listed by the Navy could adversely affect coastal zone resources. The Commission believes that the numbers and types of activities with the potential to disturb marine species and other sensitive habitat include ship movement, inert mine drops, underwater detonations, and, from activities outside the coastal zone, mid-frequency sonar, missile launches (onto federally owned San Clemente Island), and amphibious landings (onto federally owned Navy and Marine Corps bases at Camp Pendleton and the Silver Strand). Accordingly, the Commission staff requested additional information from the Navy about the activities outside the coastal zone, and in response, the Navy has provided some additional information and a list and summary of monitoring and mitigation measures it intends to adopt for the proposed training exercises (Exhibit 2), as well as an explanation that it will be coordinating with the federal regulatory agencies under the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA)).

The list of acoustic protection measures to minimize effects of active sonar and underwater detonations on marine mammals and sea turtles includes:

- requiring all Navy lookouts to review the NMFS-approved Marine Species Awareness Training material;
- shipboard surveillance for marine mammals and sea turtles;
- aerial surveillance where planes or helicopters are part of the activity;
- passive acoustic monitoring;
- implementation of a buffer zone (700 yard arc-radius around detonation sites for small explosives (mostly 1-5 pounds, with none exceeding 20 pounds));
- reducing the likelihood of exposing marine mammals or sea turtles to sounds > 173 dB (received level (RL), expressed in decibels (re 1 $\mu Pa^2 \cdot s$));
- avoidance of dropping any inert mines on marine mammals or sea turtles;
- removal from the marine environment of inert mines dropped pre- and post-exercise surveys; and
- coordination with NMFS in the event of any injury to a marine mammal or sea turtle observed and submitting monitoring reports.

The Navy has also agreed to submit its monitoring reports to the Commission staff. In addition, the Navy supplemented its list of mitigation measures in the letter and attachments contained in the January 9, 2007, Addendum prepared for the January 10, 2007, Commission meeting, which includes the Navy's January 8, 2007, letter to the Commission, with an attached list of mitigation measures, as well as a report dated December 7, 2006, on the effectiveness of these types of measures previously implemented during its Hawaii "RIMPAC" exercises .[2]

However, the Navy has not provided the Commission with the level of detail needed for the Commission to fully review the proposed project and its marine resource impacts. The Commission has traditionally required, as the Navy did provide for its most recent consistency determination involving active acoustics in Monterey Bay (CD-37-06 - Navy Monterey Bay (MB) 06), a detailed analysis of estimated "take" (numbers of animals affected), and for each acoustic source, the frequency range, duty cycle, acoustic intensity, and distance to what the Navy had estimated as the threshold for effect (although, as noted below, both NMFS and the Commission determined lower thresholds were needed). The following table shows a sample of that information provided:

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[2] Small Takes of Marine Mammals Incidental to Specified Activities; Rim of the Pacific (RIMPAC) Antisubmarine Warfare (ASW) Exercise Training Events Within the Hawaiian Islands Operating Area (OpArea), National Oceanic and Atmospheric Administration Federal Register Notice, Vol. 71, No. 78, Monday, April 24, 2006.

CD-037-06 Navy Monterey Bay 2006, or MB 06, acoustic sources

Source type	*Frequency*	*Source level*
Shipboard ADCPs (Acoustic Doppler Current Profilers) Fixed or Mobile	*50-150 kHz*	*223.6dB*
ADCPs	*140-170 kHz*	*192 dB*
Lagrangian Floats	*8-16 kHz*	*192 dB*
Side Scan Sonar	*50 kHz*	*200 dB*
Sub-bottom profiler	*3.5/12 kHz*	*221 dB*
Float tracking device	*8-16 kHz*	*192 dB*
Bubble scan device	*0.75-1 MHz*	*210 dB*

Pulse length	*Radius to 186 dB*
12-24 ms	*2-76 meters*
6 ms	*2 meters*
5 ms	*2 meters*
30 ms	*5 meters*
5 ms	*56 meters*
5 ms	*2 meters*
200 ms	*16 meters*

Although the Commission has not required an analysis of possible impacts, a detailed analysis of estimated "take" down to 154 dB and for each acoustic source, the frequency range, duty cycle, acoustic intensity and distance to what the Navy had estimated as the threshold for effect, this should not be taken as a statement that it is not necessary to do so. Due to time constraints and the fact that the Commission is conditionally approving

this activity with what it believes are adequate mitigation measures, the Commission has not insisted on receiving this information.

During its review of that consistency determination for "MB06," the Commission found:

> ***[Staff Note—Dual Criteria/Sound Exposure Levels:*** *Regulators and acoustic experts have recently been moving towards "dual" criteria for acoustic thresholds, a combined "SPL" (sound pressure level) and "SEL" (sound exposure level). The first measures instantaneous peak pressures, and the second is a more cumulative measure of energy received over time. SPL is an instantaneous measurement and can be expressed as the peak, the peak-peak, or the root mean square (rms). Root mean square, which is the square root of the arithmetic average of the squared instantaneous pressure values, is typically used in discussions of the effects of sounds on vertebrates. The commonly used reference pressure level in underwater acoustics is 1 μPa (micropascal, sometimes written as "mPa") and the units for SPLs are dB re: 1 μPa. SPL (in dB) = 20 log (pressure/reference pressure). SPL does not take the duration of a sound into account.*
>
> *SEL is an energy metric that integrates the squared instantaneous sound pressure over a stated time interval. The units for SEL are dB re: 1 μPa^2-s. SEL = SPL + 10 log (duration). If an animal is exposed to multiple pings, the SEL in each individual ping is summed to calculate the total SEL. The total SEL depends on the SPL, duration, and number of pings received. The acoustic effects on hearing*

that result in temporary threshold shift (TTS) and permanent threshold shift (PTS) do not imply any specific SPL, duration, or number of pings. The SPL and duration of each received ping are used to calculate the total SEL and determine whether the received SEL meets or exceeds the effect thresholds.]

The Navy's uses the following acoustic criteria for sound exposure level (SEL) from intermittent sounds:

- *Level A threshold – onset permanent threshold shift (PTS), or injury: 215 dB re: 1 μPa^2-s;*
- *Level B threshold – onset temporary threshold shift (TTS), or harassment: 195 dB re: 1 μPa^2-s; and*
- *Level B threshold – behavioral disruption: 186 dB re: 1 μPa^2-s.*

. . .

In the context of quite different activities, more potentially disruptive military sonar proposals (proposed in other areas of the country), the scientific debate over applicable thresholds for military mid-frequency sonar remains unresolved. For Navy mid-frequency sonar proposed off North Carolina and Hawaii, the Navy initially proposed a 190 dB threshold. NOAA Fisheries (NMFS) selected 173 dB,[4] and several institutions and environmental

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[4] NMFS recently requested that the Navy use 173 dB as an SEL threshold for behavioral impacts, in both: (1) NMFS' January 30, 2006, comments on the Navy's Draft Overseas EIS/EIR for the Dept. of the Navy's Undersea Warfare Training Range (proposed off North Carolina); and (2) NMFS' comments in its Federal Register Notice of April

organizations have suggested 154 dB may be the most appropriate threshold. Not much focus has occurred over thresholds that may be applicable to the fairly common types of research-related and shipping sounds at the frequencies, intensities and durations similar to those proposed here, and unlike strandings associated with military sonar, no documentation exists to date that these types of sources pose threats to marine mammals. Nor does NMFS believe a "take" permit is even needed for the proposed research.

In the separate, mid-frequency sonar dialogue, the Navy selected 190 dB as representing 50% of mammals behaviorally affected in a controlled study (Finneran and Schlundt (2004)). NMFS selected 173 dB from the same study (combined with two others)[4] but representing the level where 25% of the

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24, 2006, on the Navy's NMFS Permit application for Small Takes of Marine Mammals Incidental to Specified Activities; Rim of the Pacific (RIMPAC) Antisubmarine Warfare (ASW) Exercise Training Events Within the Hawaiian Islands Operating Area (OpArea).

[4] NMFS believes that ". . . in the absence of controlled exposure experiments, the following investigations and reports . . . constitute the best available scientific information for establishing an appropriate acoustic threshold for sub-TTS behavioral disruption: (1) Finneran and Schlundt (2004), in which behavioral observations from TTS studies of captive bottlenose dolphins and beluga whales are analyzed as a function of known noise exposure; (2) Nowachek [sic] et al. (2004), in which controlled exposure experiments were conducted on North Atlantic right whales using ship noise, social sounds of con-specifics, and an alerting stimulus; and (3) NMFS (2005), in which the behavioral reactions of killer whales in the presence of tactical midfrequency sonar were observed, and analyzed after the fact. Based on these three studies, NMFS has set the sub-TTS behavioral disruption threshold at 173 dB re 1 μPa-s (SEL)." (Fed. Reg. Notice, April 24, 2006, Navy's

mammals showed an effect. Placing more emphasis on the right whale studies in the wild (Nowacek et al. 2003), comments on the same Navy mid-frequency sonar proposals included letters from the Natural Resources Defense Council (NRDC) and Woods Hole Oceanographic Institution (WHOI, which is also conducting some of the proposed research) urged a lowering of the behavioral threshold to 154 dB. Based on the Nowacek study WHOI noted ". . . significant behavioral responses (cessation of foraging and re-location) were reported at ELs (energy levels, or received levels) of about 154 dB . . . .[5] *NRDC echoed similar concerns in its May 24, 2006, comments on "RIMPAC."*

Having been extensively involved in the Marine Mammal Commission's Advisory Committee on Acoustic Impacts on Marine Mammals, the Commission is well aware of the difficulty in achieving consensus on regulatory thresholds for marine mammal impacts. At the same time, unlike the above-discussed Hawaii and North Carolina activities (Navy mid-range sonar, 1 to 10 kHz), for which a NMFS take permit was required,[6] *and for which documentation does exist that similar past comparable activities have been associated with, and likely caused in some cases,*[7] *marine mammal strandings and thus that the sound levels in those activities warrant serious concern, NMFS does not believe the*

NMFS Permit application for "RIMPAC")

[5] Letter dated 27 January, 2006, from Dr. Mark P. Johnson, Woods Hole Oceanographic Institution, to Keith Jenkins, U.S. Navy.

[6] NMFS estimated a "Level B" take of up to 30,000+ marine mammals for the Navy's "RIMPAC" exercise.

[7] For example, the March 2000 Bahamas beaked whale stranding.

proposed research activities in Monterey Bay even trigger the need for a take permit.

Thus, while the case can be made that commonly occurring, predominantly high-frequency marine research activities should not be treated the same as mid-frequency military sonar, the issue of marine mammal threshold criteria continues to be debated. While the Commission agrees that the movement from a single to a dual criteria is a step in the right direction, the Commission does not believe the Navy has established a basis for its proposed 186 dB threshold. An equivalent if not better case can be made for adopting what Woods Hole Oceanographic Institution has suggested (i.e., a more precautionary 154 dB threshold.

Prior to the hearing, the Navy agreed (in a telephone communication with the Commission staff) that the 100 yd. marine mammal preclusion zone included the understanding that if a marine mammal were to enter the agreed-upon 100 yd. preclusion zone, active acoustic devices would be turned off. During the public hearing, noting a difference of opinion about the marine mammal thresholds, the Commission indicated its preference for a 154 decibel (dB) Sound Energy Level (SEL) threshold, rather than the 186 dB threshold that the Navy had relied on in its consistency determination. Consequently, the Commission requested, and the Navy representative agreed, that the Navy would provide an additional calculation of the lateral (horizontal) distance to 154 dB, and if that meant a larger preclusion radius than the previously-agreed-to 100 yd. preclusion zone, then any such larger preclusion

zone would become the preclusion zone for the proposed research. Thus, this commitment was incorporated into the project as part of the Navy's submittal.

NMFS defended its rationale for its use of a 173 dB SEL threshold during its review of the Navy's RIMPAC training is contained in its Federal Register Notice of July 7, 2006,[8] which included:

Harassment Thresholds

For the purposes of this IHA, NMFS recognizes three levels of take; Level A Harassment (Injury), Level B Harassment (Behavioral Disruption), and mortality (or serious injury that may lead to mortality) (Table 2). Mortality, or serious injury leading to mortality, may not be authorized with an IHA.

NMFS has determined that for acoustic effects, acoustic thresholds are the most effective way to consistently both apply measures to avoid or minimize the impacts of an action and to quantitatively estimate the effects of an action. Thresholds are commonly used in two ways: (1) To establish a shutdown or power down zone, i.e., if an animal enters an area calculated to be ensonified above the level of an established threshold, a sound source is powered down or shut down; and (2) to calculate take, for example, if the Level A Harassment threshold is 215 dB, a model may be used to calculate the area around the sound source that will be ensonified to

[8] http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/06-6050.htm

that level or above, then, based on the estimated density of animals and the distance that the sound source moves, NMFS can estimate the number of marine mammals exposed to 215 dB. The rationale behind the acoustic thresholds proposed for this authorization are discussed below.

(1) Finneran and Schlundt (2004) analyzed behavioral observations from related TTS studies (Schlundt et al., 2000; Finneran et al., 2001; 2003) to calculate cetacean behavioral reactions as a function of known noise exposure. During the TTS experiments, four dolphins and two white whales were exposed during a total of 224 sessions to 1-s pulses between 160 and 204 dB re 1 mPa (root-mean-square sound pressure level (SPL)), at 0.4, 3, 10, 20, and 75 kHz. Finneran and Schlundt (2004) evaluated the behavioral observations in each session and determined whether a "behavioral alteration" (ranging from modifications of response behavior during hearing sessions to attacking the experimental equipment) occurred. For each frequency, the percentage of sessions in which behavioral alterations occurred was calculated as a function of received noise SPL. By pooling data across individuals and test frequencies, respective SPL levels coincident with responses by 25, 50, and 75 percent behavioral alteration were documented. 190 dB re 1 mPa (SPL) is the point at which 50 percent of the animals exposed to 3, 10, and 20 kHz tones were deemed to respond with some behavioral alteration, and the threshold that the Navy originally proposed for sub-TTS behavioral disturbance.

(2) Nowacek et al. (2004) conducted controlled exposure experiments on North Atlantic right whales using ship noise, social sounds of con-specifics, and an alerting stimulus (frequency modulated tonal signals between 500 Hz and 4.5 kHz). Animals were tagged with acoustic sensors (D-tags) that simultaneously measured movement in three dimensions. Whales reacted strongly to alert signals at received levels of 133-148 dB SPL, mildly to conspecific signals, and not at all to ship sounds or actual vessels. The alert stimulus caused whales to immediately cease foraging behavior and swim rapidly to the surface. Although SEL values were not directly reported, based on received exposure durations, approximate received values were on the order of 160 dB re: 1 mPa\2\-s.

(3) NMFS (2005) evaluated the acoustic exposures and coincident behavioral reactions of killer whales in the presence of tactical mid-frequency sonar. In this case, none of the animals were directly fitted with acoustic dosimeters. However, based on a Naval Research Laboratory (NRL) analysis that took advantage of the fact that calibrated measurements of the sonar signals were made in situ and using advanced modeling to bound likely received exposures, estimates of received sonar signals by the killer whales were possible. Received SPL values ranged from 121 to 175 dB re: 1 mPa. The most probable SEL values were 169.1 to 187.4 dB re: 1 mPa\2\-s; worst-case estimates ranged from 177.7 to 195.8 dB re: 1 mPa\2\-s. Researchers observing the animals during the course of sonar exposure re-

ported unusual alterations in swimming, breathing, and diving behavior.

For more detailed information regarding how marine mammals may respond to sound, see the Navy's IHA application, the Navy's associated EA, Richardson's Marine Mammals and Noise (1995), or the references cited on NMFS' Ocean Acoustic Program website (see ADDRESSES)

Sub-TTS Behavioral Disruption

NMFS believes that behavioral disruption of marine mammals may result from received levels of mid-frequency sonar lower than those believed necessary to induce TTS, and further, that the lower limit of Level B Harassment may be defined by the received sound levels associated with these sub-TTS behavioral disruptions. As of yet, no controlled exposure experiments have been conducted wherein wild cetaceans are deliberately exposed to tactical mid-frequency sonar and their reactions carefully observed. However, NMFS believes that in the absence of controlled exposure experiments, the following investigations and reports (described previously in the Behavioral Effects section) constitute the best available scientific information for establishing an appropriate acoustic threshold for sub-TTS behavioral disruption: (1) Finneran and Schlundt (2004), in which behavioral observations from TTS studies of captive bottlenose dolphins and beluga whales are analyzed as a function of known noise exposure; (2) Nowachek et al. (2004), in which controlled exposure experiments were conducted on North Atlantic right whales using ship noise, social sounds of con-specif-

ics, and an alerting stimulus; and (3) NMFS (2005), in which the behavioral reactions of killer whales in the presence of tactical mid-frequency sonar were observed, and analyzed after the fact. Based on these three studies, NMFS has set the sub-TTS behavioral disruption threshold at 173 dB re 1 mPa\2\-s (SEL).

The Finneran and Schlundt (2004) analysis is an important piece in the development of an appropriate acoustic threshold for sub-TTS behavioral disruption because: (1) researchers had superior control over and ability to quantify noise exposure conditions; (2) behavioral patterns of exposed marine mammals were readily observable and definable; and, (3) fatiguing noise consisted of tonal noise exposures with frequencies contained in the tactical mid-frequency sonar bandwidth. In Finneran and Schlundt (2004) 190 dB re 1 mPa (SPL) is the point at which 50 percent of the animals exposed to 3, 10, and 20 kHz tones were deemed to respond with some behavioral alteration. This 50 percent behavior alteration level (190 dB SPL) may be converted to an SEL criterion of 190 dB re 1 mPa\2\-s (the numerical values are identical because exposure durations were 1-s), which provides consistency with the Level A (PTS) effects threshold, which are also expressed in SEL. The Navy proposed 190 dB (SEL) as the acoustic threshold for sub-TTS behavioral disruption in the first IHA application they submitted to NMFS.

NMFS acknowledges the advantages arising from the use of behavioral observations in controlled laboratory conditions; however, there is considerable uncertainty regarding the validity of applying data collected from trained captives conditioned to not respond to noise exposure in establishing thresholds for behavioral reactions of naive wild individuals to a sound source that apparently evokes strong reactions in some marine mammals. Although wide-ranging in terms of sound sources, context, and type/extent of observations reported, the large and growing body of literature regarding behavioral reactions of wild, naive marine mammals to anthropogenic exposure generally suggests that wild animals are behaviorally affected at significantly lower levels than those determined for captive animals by Finneran and Schlundt (2004). For instance, some cetaceans exposed to human noise sound sources, such as seismic airgun sounds and low frequency sonar signals, have been shown to exhibit avoidance behavior when the animals are exposed to noise levels of 140-160 dB re: 1 mPa under certain conditions (Malme et al., 1983; 1984; 1988; Ljungblad et al., 1988; Tyack and Clark, 1998). Richardson et al. (1995) reviewed the behavioral response data for many marine mammal species and a wide range of human sound sources.

Two specific situations for which exposure conditions and behavioral reactions of free-ranging marine mammals exposed to sounds very similar to those proposed for use in RIMPAC are considered by Nowacek et al. (2004) and NMFS (2005) (described previously in Behavioral Effects subsection).

In the Nowacek et al. (2004) study, North Atlantic right whales reacted strongly to alert signals at received levels of 133-148 dB SPL, which, based on received exposure durations, is approximately equivalent to 160 dB re: 1 mPa\2\-s (SEL). In the NMFS (2005) report, unusual alterations in swimming, breathing, and diving behaviors of killer whales observed by researchers in Haro Strait were correlated, after the fact, with the presence of estimated received sound levels between 169.1 and 187.4 dB re: 1 mPa\2\-s (SEL).

While acknowledging the limitations of all three of these studies and noting that they may not necessarily be predictive of how wild cetaceans might react to mid-frequency sonar signals in the OpArea, NMFS believes that these three studies are the best available science to support the selection of an acoustic sub-TTS behavioral disturbance threshold at this time. Taking into account all three studies, NMFS has established 173 dB re: 1 mPa\2\ (SEL) as the threshold for sub-TTS behavioral disturbance.

In its "RIMPAC" review (same Federal Register notice[9]), NMFS commented as follows on a request to use a lower than 173 dB threshold:

Comment 44: The 173-dB behavioral threshold is not supportable, as significant behavioral changes have been demonstrated in a controlled exposure experiment (Nowacek et al., 2004) at 154 dB SEL. It is not appropriate to use the 25th percentile results of the Finneran study (173 dB), as the captive ani-

[9] http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/06-6050.htm

mals in that study cannot adequately represent the responses of wild animals. Alternatively, NMFS received one comment in support of the issuance of the IHA, but that commenter believed that the 190-dB behavioral threshold was supported, not the 190-dB threshold.

Response: As discussed in the text, NMFS used the three examples (Finneran and Schlundt, 2004, Nowacek et al., 2004; and NMFS Haro Strait analysis) of cetacean responses to high intensity sound that we believe are the most predictive for marine mammal responses to tactical sonar to develop the threshold. Generally, NMFS interprets the received SELs in these studies as approximately 50 percent disturbance = 190 dB SEL (Finneran), approximately maximum SEL:160 dB (Nowacek), and approximately 165-175 dB SEL (Haro Strait). Where using a single threshold, instead of the likely more appropriate but currently unknown dose-response sigmoidal relationship, NMFS acknowledges that some animals exposed above the threshold may not be harassed by the sound and, conversely, some animals exposed to a sound below the threshold may be harassed. Therefore, NMFS believes that an appropriate threshold is a number somewhere between the lowest and highest mid-frequency signal exposure levels to which animals have demonstrated profound behavioral disturbance, which is why we chose 173 dB SEL for this authorization.

NMFS also considers disruption of the behavior of marine mammals that can result from sound levels lower than those considered necessary for TTS to occur (often referred to as sub-TTS behavioral dis-

ruption). Though few studies have specifically documented the effects of tactical mid-frequency sonar on the behavior of marine mammals in the wild, many studies have reported the effects of a wide range of intense anthropogenic acoustic stimuli on specific facets of marine mammal behavior, including migration (Malme et al., 1984; Ljungblad et al., 1988; Richardson et al., 1999), feeding (Malme et al., 1988), and surfacing (Nowachek et al., 2004). Below, NMFS summarizes the results of two studies and one after-the-fact investigation wherein the natural behavior patterns of marine mammals exposed to levels of tactical mid-frequency sonar, or sounds similar to mid-frequency sonar, lower than those thought to induce TTS were disrupted to the point where it was abandoned or significantly altered:

(1) Finneran and Schlundt (2004) analyzed behavioral observations from related TTS studies (Schlundt et al., 2000; Finneran et al., 2001; 2003) to calculate cetacean behavioral reactions as a function of known noise exposure. During the TTS experiments, four dolphins and two white whales were exposed during a total of 224 sessions to 1-s pulses between 160 and 204 dB re 1 mPa (root-mean-square sound pressure level (SPL)), at 0.4, 3, 10, 20, and 75 kHz. Finneran and Schlundt (2004) evaluated the behavioral observations in each session and determined whether a "behavioral alteration" (ranging from modifications of response behavior during hearing sessions to attacking the experimental equipment) occurred. For each frequency, the percentage of sessions in which behavioral alterations occurred was calculated as a function of received

noise SPL. By pooling data across individuals and test frequencies, respective SPL levels coincident with responses by 25, 50, and 75 percent behavioral alteration were documented. 190 dB re 1 mPa (SPL) is the point at which 50 percent of the animals exposed to 3, 10, and 20 kHz tones were deemed to respond with some behavioral alteration, and the threshold that the Navy originally proposed for sub-TTS behavioral disturbance.

(2) Nowacek et al. (2004) conducted controlled exposure experiments on North Atlantic right whales using ship noise, social sounds of con-specifics, and an alerting stimulus (frequency modulated tonal signals between 500 Hz and 4.5 kHz). Animals were tagged with acoustic sensors (D-tags) that simultaneously measured movement in three dimensions. Whales reacted strongly to alert signals at received levels of 133-148 dB SPL, mildly to conspecific signals, and not at all to ship sounds or actual vessels. The alert stimulus caused whales to immediately cease foraging behavior and swim rapidly to the surface. Although SEL values were not directly reported, based on received exposure durations, approximate received values were on the order of 160 dB re: 1 mPa\2\-s.

(3) NMFS (2005) evaluated the acoustic exposures and coincident behavioral reactions of killer whales in the presence of tactical mid-frequency sonar. In this case, none of the animals were directly fitted with acoustic dosimeters. However, based on a Naval Research Laboratory (NRL) analysis that took advantage of the fact that calibrated measurements of the sonar signals were made in situ and

using advanced modeling to bound likely received exposures, estimates of received sonar signals by the killer whales were possible. Received SPL values ranged from 121 to 175 dB re: 1 mPa. The most probable SEL values were 169.1 to 187.4 dB re: 1 mPa\2\-s; worst-case estimates ranged from 177.7 to 195.8 dB re: 1 mPa\2\-s. Researchers observing the animals during the course of sonar exposure reported unusual alterations in swimming, breathing, and diving behavior.

[Note: the Finneran and Schlundt (2004) and Nowacek et al. (2004) studies referenced above are attached as Exhibits 10 and 11.]

As it found during the review of CD-037-06, the Commission believes that a lower threshold than articulated by NMFS is warranted. NMFS appears to have taken a "middle ground" approach, noting that available evidence exists to support a lower threshold, but basing its determination on the level at which 25% of mammals were behaviorally affected in a captive dolphin study (Finneran and Schlundt (2004)). As the Commission noted in CD-037-06, the Nowacek study (Exhibit 10) (and supported by the January 27, 2006, letter from Woods Hole to the Navy (Exhibit 9)) represents a more reliable indicator, given that it addresses animals not in captivity (and not trained to expect rewards). Given the results of this study, combined with the paucity of data concerning the effects of anthropogenic sound on marine species, and the difficulty in detecting marine mammals and sea turtles, a compelling case exists that a lower threshold is warranted. Therefore, the Commission reiterates its finding from CD-037-06: "While the Commission agrees that the movement from a single to a

dual criteria is a step in the right direction, the Commission does not believe the Navy has established a basis for its proposed 186 dB threshold. An equivalent if not better case can be made for adopting what Woods Hole Oceanographic Institution has suggested (i.e., a more precautionary 154 dB threshold)." Consequently, the Commission believes the conditions on pages 10-13 are needed to, among other measures, implement a 154 dB (received level (RL)).

The Commission notes that further support for a lower threshold exists in the Woods Hole Oceanographic Institution letter of January, 27, 2006 to the Navy (Exhibit 9), NMFS' IHA for a recent Scripps seismic survey, and the National Research Council's 2005 report "Marine Mammal Populations and Ocean Noise: Determining When Noise Causes Biologically Significant Effects." Additional support for this threshold can be found in the January 9, 2007, Addendum prepared for the January 10, 2007, Commission meeting (including letters submitted by the Natural Resources Defense Council (January 9, 2007), Linda Weilgart (January 8, 2007), and David Bain (January 9, 2006) (sic).

In its IHA for Scripps Institution of Oceanography (SIO) (Incidental Harassment Authorization (IHA) to take small numbers of marine mammals, by harassment, incidental to conducting an oceanographic survey in the South Pacific Ocean (SPO),[10] NMFS set forth a 160 dB threshold, stating:

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[10] http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/E6-21611.htm and http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/06-8353.htm

The Level B harassment estimates are based on a consideration of the number of marine mammals that might be exposed to sound levels at or higher than 160 dB, the criterion for the onset of Level B harassment, by operations with the 2 GI-gun array planned to be used for this project.

The National Research Council's 2005 report "Marine Mammal Populations and Ocean Noise: Determining When Noise Causes Biologically Significant Effects" highlighted the uncertainties in relying on studies from captive animals and noted:

The behavioral responses of marine mammals to acoustic stimuli vary widely, depending on the species, the context, the properties of the stimuli, and prior exposure of the animals (Wartzok et al., 2004). Species variation in auditory processing is so important that a distinction should certainly be made between taxonomic groups that have widely different hearing and sensitivity frequencies. For example, pinnipeds have lower maximal frequency of hearing and maximal sensitivity of hearing than odontocetes (toothed whales). They typically have a high-frequency cutoff in their underwater hearing between 30 and 60 kHz, and maximal sensitivity of about 60 dB re 1 μPa, and odontocetes have best frequency of hearing between 80 and 150 kHz and maximum sensitivity between 40-50 dB. Therefore, odontocetes can hear over a wider frequency range and have keener hearing than pinnipeds, so they could potentially be affected by a wider variety of sounds. Little is known about the frequency range of hearing and sensitivity of some marine mammal taxa, such as baleen whales, but several attempts

have been made to divide marine mammals into functional categories on the basis of hearing (e.g., Ketten, 1994).

As mentioned above, some of the variation in responses between species or individuals may stem from differences in audition. Not only do different species have different hearing capabilities but there is considerable variation in hearing among conspecifics. One of the most predictable patterns in mammals involves age-related hearing loss, which particularly affects high frequencies and is more common in males than females (Willott et al., 2001).

Auditory processing is less likely than behavior to differ between captive and wild animals, and captive data on behavioral reactions closely linked to audition may be relevant to other settings. For example, Schlundt et al. (2000) noted disturbance reactions of captive bottlenose dolphins (Tursiops truncatus) and beluga whales during TTS experiments. The behavioral reactions involved avoidance of the source, refusal of participation in the test, aggressive threats, or attacks on the equipment. Finneran and Schlundt (2004) showed that the probability of those reactions increased with increasing received level from 160 to 200 dB rms re 1 μPa at 1m except for low-frequency (400-Hz) stimuli near the low-frequency boundary of auditory sensitivity. The kinds of reactions observed and how they scale with intense exposures near the level that provoked TTS suggest that the signals were perceived as annoyingly loud.

Some of the variation in responses to sound may stem from experience. There are several well-known mechanisms by which an animal modifies its responses to a sound stimulus, depending upon reinforcement correlated with exposure. The response of animals to an innocuous stimulus often wanes after repeated exposure—a process called habituation. The National Research Council (NRC, 1993) recommended studies on habituation of marine mammals to repeated human-made sounds. In one of few experimental studies of habituation in marine mammals, Cox et al. (2001) showed that porpoises tended to avoid at a distance of 208 m upon initial exposure to a 10-kHz pinger with a source level of 132 dB peak to peak re 1 μPa at 1m. This avoidance distance dropped by 50% within 4 days, and sightings within 125 m equaled control values within 10-11 days. The pingers are used on nets to prevent porpoises from becoming entangled in them, so evaluations of their effectiveness must take habituation into account.

Kastelein et al. (1997) report that a captive harbor porpoise (Phocoena phocoena) avoided exposure to high-frequency pingers with source levels of 103-117 dB rms re 1 μPa at 1m and received levels of 78-90 dB rms re 1 μPa. When exposed to a source with a level of 158 dB rms re 1 μPa at 1m, the porpoise swam as far away as possible in the enclosure and made shallow rapid dives. Those results combine with the results of Cox et al. (2001) to suggest that porpoises react to sound at much lower levels than the captive delphinids studied by Finneran and Schlundt (2004). However, the context of the captive studies was quite different: the dolphins and belugas

studied by Finneran and Schlundt were being rewarded for submitting to exposure to intense sounds, whereas the porpoise was not being rewarded for remaining in the sound field.

If an animal in captivity or the wild is conditioned to associate a sound with a food reward, it may become more tolerant of the sound and may become sensitized and use the sound as a cue for foraging. Several large-scale studies have shown that the distribution of feeding baleen whales correlates with prey but not with loud sonar or industrial activities (Croll et al., 2001); but the studies were unable to test for potentially more subtle effects on feeding, such as reduced prey capture per unit effort and reduced time engaged in feeding.

Some of the strongest reactions of marine mammals to human-generated noise may occur when the sound happens to match their general template for predator sounds. The risk-benefit relationship is very different for predator defense and foraging. An animal may lose a meal if it fails to recognize a foraging opportunity, but it may die if it fails to detect predators. Animals do not have the luxury of learning to detect predators through experience with them. Deecke et al. (2002) showed that harbor seals responded strongly to playbacks of the calls of mammal-eating killer whales and unfamiliar fish-eating killer whales but not to familiar calls of local fish-eating killer whales. That suggests that, like birds studied with visual models of predators (Schleidt, 1961a; 1961b), these animals inherit diffuse templates for predators. They initially respond to any stimulus similar to the predator template but

learn through habituation to cease responding to harmless variants of the general predator image.

It would make sense for animals to show strong reactions to novel sounds that fit within the predator template, whatever the received level. Indeed, the behavioral reactions of belugas to ice breaker noise match the local Inuit description of their responses to killer whales, a dangerous predator. Some of those strong reactions to novel sounds, such as the responses of diving right whales to an artificial alarm stimulus as reported by Nowacek et al. (2003), might be expected to habituate if the stimuli are distinguishable from real predators and are not associated with aversive effects. In fact, the only right whale subject not to respond was the last of six whales tested, and it may have heard the stimulus up to five times before. Beluga whales that fled icebreaker noise at received levels of 94-105 dB rms re 1 μPa returned in 1-2 days to the area where received icebreaker noise was 120 dB rms re 1 μPa (Finley et al., 1990). In contrast, Kastak and Schusterman (1996) reported that a captive elephant seal not only did not habituate but was sensitized to a broadband pulsed stimulus somewhat similar to killer whale echolocation clicks even though nothing dangerous or aversive was associated with the noise.

The low sound levels that stimulate intense responses of Arctic beluga whales (Frost et al., 1984; LGL and Greeneridge, 1986; Cosens and Dueck, 1988) contrast sharply with the high levels required to evoke responses in captive beluga whales (Finneran and Schlundt, 2004). This difference highlights that there are likely to be several kinds of re-

sponse, depending on whether the animal is captive and whether the noise resembles that of a known predator. Annoyance responses may require levels of sound well above levels that may stimulate strong antipredator responses. If animals in the wild hear a sound that matches their auditory template for a predator, they may avoid exposures to sound levels much lower than those required to elicit the disturbance responses observed by Finneran and Schlundt (2004). If learning can modify the predator template, as suggested by Deecke et al. (2002), it is essential to conduct studies of behavioral responses of animals to human-made stimuli in habitats resembling those encountered by wild populations.

An important property of most anthropogenic sound is that high-intensity levels are typically confined to the immediate location of the sound source (an exception is high-intensity, low-frequency sound), so any effects caused by exposure to high levels are reduced as animals move away from the source. However, high-intensity low-frequency sound travels well enough underwater that animals can detect signals at ranges of tens to hundreds of kilometers from the source. If, as in the case of Arctic belugas hearing icebreaker noise, exposure to low received levels can still trigger an intense response, a few sources may affect a large fraction of a population.

Even in the absence of a strong response, low received levels of sound can affect a large fraction of a population if the sound results in a masking of normal stimuli. Marine mammals show exquisite adaptations to overcome masking, but they may not be effective in the presence of pervasive anthropogenic

sounds (reviewed in NRC, 2003b; Wartzok et al., 2004).

Concerning other issues raised by this proposal, the Navy has documented that the project would not adversely affect kelp beds, white abalone, or any marine mammal haulout areas or rookeries. The primary onshore sensitive species of concern are snowy plovers at the Silver Strand in Coronado, and island night lizards and loggerhead shrikes on San Clemente Island (Exhibits 5-6), but again, measures and efforts are in place to protect these species, both through Biological Opinions covering Navy training exercises and through the Navy's INRMPs for the affected bases. Of these species the only "listed" species potentially affected that lives completely outside the coastal zone is the island night lizard (on San Clemente Island). Although it is listed as a threatened species under the ESA, based on extrapolation the Fish and Wildlife Service estimates a fairly robust population of 2-20 million individuals throughout the island (and the Navy's INRMP estimates "an excess of 20 million"). The Fish and Wildlife Service is currently undergoing an analysis to consider "de-listing" the species, at least for this island (compared to possibly genetically distinct and much smaller populations on San Nicolas and Santa Barbara Islands). Also, possibly arguably not a coastal zone species (the biological important activities of which occur predominantly on the federally owned island) is the San Clemente Island loggerhead shrike, which does not migrate but is sometimes observed over water areas, and which has been described as " . . . possibly the most endangered animal population in the continental United States." (Lynn et al. 1999) (Source, Navy May 2002 San Clemente Island

Integrated Natural Resources Management Plan (INRMP). Other populations of loggerhead shrikes may occur on the mainland and nearby Santa Catalina Island; however, the San Clemente Island population is genetically and morphologically distinct from these populations (Ridgway 1903; Miller 1931; Mundy et al. 1996 in Lynn et al. 2000)(same source).

Through the ESA and Integrated Natural Resource Management Plan (INRMP) processes, the Navy is currently implementing aggressive, island-wide measures to manage, protect, and improve loggerhead shrike and island night lizard habitat, including but not limited to, surveying, monitoring and research, predator management and removal, fire controls (including during Naval Surface Fire Support from the proposed training activities), establishing restricted areas off limits to military and other human activities, captive breeding, and habitat enhancement. Firebreaks are coordinated with the Navy's Natural Resources Office prior to installation, and fire suppression equipment is on site during live-firing events. The Navy has also established snowy plover avoidance measures that must be implemented for any training occurring during the snowy plover nesting season at the Silver Strand Peninsula. The Marine Corps implements conservation measures on landing beaches off Camp Pendleton, including: fencing nesting areas, predator controls, restoring dunes within nesting areas, monitoring breeding activities, and studying long-term snowy plover and least tern population trends.

In conclusion, for the reasons discussed on pages 17-32 above, based on the project's marine resource concerns, the Commission is conditioning its concurrence on requirements that the Navy incorporate the following

monitoring and mitigation measures (see p. 10-13 for condition language):

implement safety zones out to the 154 dB (received level (RL), expressed in decibels (re 1 μPa2 ·s));

include two dedicated NOAA-trained observers at all times during use of mid-frequency sonar;

provide adequate, NMFS approved training for the monitors;

include Passive Acoustic Monitoring and use it to enforce the safety zones;

perform aerial monitoring;

avoid, where possible, effect on gray whales, the Channel Islands National Marine Sanctuary, and areas with known high concentrations of marine mammals, and complex, steep seabed topography (except on the Navy's instrumented range off San Clemente Island);

additional measures for night and low visibility conditions, during Surface Ducting Conditions, and for Choke-point exercises;

to the degree possible, retrieval of inert mine shapes dropped; and

as agreed to previously, submit all monitoring results provided to NMFS (unless classified) to the Commission staff; and

implement pre-exercise monitoring one-half hour before sonar use.

While the proposed training is not a new activity in these waters, this is the first opportunity the Commis-

sion has had to review issues related to mid-frequency sonar since concerns were raised in the Bahamas, Haro Strait, Hawaii, and other coastal areas in recent years. The Commission concludes that, only as conditioned, would the proposed training exercises be consistent with the applicable marine resource, water quality, and fill of open coastal waters policies (Sections 30230, 20331 [*sic*], and 30233) of the Coastal Act. The Commission also concludes that, for the other habitat issues raised, the project would be consistent with the environmentally sensitive habitat policy (Section 30240) of the Coastal Act.

As provided in 15 CFR § 930.4(b), in the event the Navy does not agree with the Commission's conditions of concurrence, then all parties shall treat this conditional concurrence as an objection.

B. Public Access/Fishing. Section 30210 of the Coastal Act provides:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with safety needs and the need to protect public rights, rights of private property public owners, and natural resource areas from overuse.*

Section 30212 provides in part:

> *(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:*
>
> > *(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources. . . .*

Section 30220 provides:

> *Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.*

In addition, aside from the commercial fishing protection afforded under Section 30230, quoted above on page 14, Sections 30234 and 30234.5 underscore the need to protect commercial and recreational fishing opportunities:

> 30234. *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded. Existing commercial fishing and recreational boating harbor space shall not be reduced unless the demand for those facilities no longer exists or adequate substitute space has been provided. Proposed recreational boating facilities shall, where feasible, be designed and located in such a fashion as not to interfere with the needs of the commercial fishing industry.*

> 30234.5. *The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.*

The Navy maintains that the project is consistent with the public access and recreation, and recreational fishing policies of the Coastal Act, stating that:

> *The Proposed Action is fully consistent with California CZ policy Section 30210 because it would not alter current public access to recreational areas or recreational opportunities in the CZ. Public beaches and beach access routes are not affected, nor are National Park facilities. Notices to Mariners*

(NOTMARs) and Notices-to-Airmen (NOTAMs) are issued to allow mariners and commercial recreational services (e.g., dive charters) to select alternate destinations without substantially affecting their activities. The Proposed Action would not increase the number or type of training operations or change the training locations.

Most COMPTUEX/JTFEX activities in the CZ are compatible with concurrent recreational activities. Some COMPTUEX/JTFEX activities (i.e., those involving the live firing of weapons) require access to be restricted for safety and military security concerns. COMPTUEX/JTFEX activities in areas of joint use occasionally limit public access to portions of the shoreline or nearshore waters for short periods because the Navy implements strict safety procedures prior to each training activity. The locations, sizes, and durations of safety zones are carefully tailored to the needs of the military exercise so as to minimize the effects on public access and recreation, and ensure public safety.

Discussion

The Navy has implemented procedures to efficiently inform the public about temporary exclusions when such exclusions are necessary for public safety during NSFS, Mine Exercise (MINEX), DEMO, Ship Mine Countermeasures Exercise (SMCMEX), and Amphibious Exercise (AMPHIBEX). Potential effects of the Proposed Action on public access to beaches are negligible because these activities take place on or in proximity to Federally-owned property for which the public is not permitted access.

Elements of these activities that require exclusive use of an open-ocean area have the potential to affect public access and recreational fishing operations during the actual operation. Around SCI, these operations occur in Federally-designated danger and restricted zones. In the other nearshore operating areas offshore SSTC and MCBCP, non-authorized individuals are cleared from the area for the duration of the exercise. Short-term, intermittent effects on individual recreational use of these areas may result from temporary closures of specific operating areas, but the areas are relatively small, and easily circumvented.

Prior to commencement of these events, NOTMARs and NOTAMs are issued, providing the public, including commercial fishermen, with notice of upcoming location and time restrictions in specific training areas. In addition, the Southern California Offshore Range (SCORE) maintains a public website depicting upcoming restrictions in designated Danger Zones around SCI. These notices detail date, time, duration, and location of restricted access so that commercial and private fishermen and divers can plan their activities accordingly. The restricted times only extend through the duration of the training activity; thereby allowing the public to shift their activities to alternate areas during temporary closures. The Navy will continue to schedule its activities to minimize conflicts, and to provide adequate public notice. The Proposed Action would be consistent with Section 30210 to the maximum extent practicable.

Nearshore and Beach Areas

San Clemente Island Range Complex

SCI is Navy-owned property where public access is strictly controlled for purposes of military security and public safety. The Navy considers all ocean areas around SCI to be co-use zones that are available for public access, except for the restricted anchorages in the Wilson Cove Exclusive Zone. Access to some co-use zones may be restricted from time to time for public safety. When such restrictions are necessary, the Navy implements procedures to minimize effects on the public. Under the Proposed Action, COMPTUEX/JTFEX activities at SCI are consistent with Section 30210. Recreational activities in the CZ include sport fishing, sailing, boating, whale-watching, and diving. Commercial uses include fishing, tourism, and marine transportation. The area also is used by the public for scientific research and education.

Silver Strand Training Complex

The Navy leases ocean beaches along the SSTC from the California State Lands Commission. Boat lanes extend out 2 nm from these beaches in support of offshore amphibious training. Bayside training areas off the northern portion of SSTC are also used in support of amphibious training events. When not in use for military training, the nearshore bay and ocean waters off SSTC are used for commercial fishing and recreational boating. The Navy training areas on San Diego Bay adjacent to the peninsula are within a designated restricted area. However, non-Navy vessels may transit through the area

when the training lanes are not scheduled for military activities. Consistent with ongoing activities, public access and recreation co-exist with Navy training.

The Navy contributes to the provision of public access on the Silver Strand peninsula. The Silver Strand peninsula has several water-oriented public facilities, including marinas, parks, beaches, and resorts. Together, these facilities provide the public with substantial access to the local beaches and waters of San Diego Bay and offshore areas. YMCA Camp Surf operates on 80 acres on SSTC-South at the southern end of the peninsula on Navy land, providing overnight beachfront accommodations for local youth and instruction in water sports. A salt marsh ecological preserve and salt evaporator ponds located on about 27 acres (10.9 hectares) of SSTC South property fronting San Diego Bay is leased by the Navy to San Diego County Department of Parks and Recreation, which has installed a parking lot and bicycle and pedestrian paths. The Proposed Action is consistent with California CZ Section 30210 to provide maximum public access consistent with public safety.

Marine Corps Base Camp Pendleton

Substantial public access to beaches and nearshore waters is provided both to the north and south of Marine Corps Base Camp Pendleton. San Onofre Beach, located at the northern end of MCBCP, is a public beach leased to the State by the Marine Corps. Both San Onofre State Beach and the adjacent San Mateo State Preserve/Trestles Beach are directly

accessible from the Interstate-5 freeway. Immediately south of Camp Pendleton lies the City of Oceanside, with a harbor and extensive beach areas. Public access is not affected by COMPTUEX/JTFEX training exercises because the Camp Pendleton shoreline is not accessible to the public. Under the Proposed Action, the extent and accessibility of adjacent public areas would not change. The Proposed Action is consistent with Section 30210 to provide maximum public access consistent with public safety.

Concerning commercial fishing, the Navy states:

Potential effects of the Proposed Action on economic, commercial, and recreational fishing have been evaluated by the Navy. COMPTUEX/JTFEX activities do not have the potential to result in permanent modifications of the marine environment within the CZ. Elements of the Proposed Action that require exclusive use of an ocean area (e.g., those operations in which weapons are fired) have the potential to affect commercial and recreational fishing operations during the actual operation. Short-term adverse effects on individual commercial fishermen may result from temporary closures of specific ocean areas, but the economic importance of the regional commercial fishing industry would be unchanged.

Prior to these events, NOTMARs and NOTAMs are issued, providing the public and commercial fishermen with notice of upcoming location and timing restrictions in specific training areas. In addition, the Southern California Offshore Range (SCORE)

maintains a public website depicting upcoming restrictions in designated Danger Zones around SCI. These notices detail date, time duration, and location of restricted access, so that commercial and private fishermen and divers can plan their activities accordingly. The restricted times only extend through the duration of the training activity; thereby allowing the public to shift their activities to alternate areas during temporary closures. Thus, the Proposed Action would be consistent with Section 30234.5 to the maximum extent practicable.

The Navy's proposal is consistent with the Coastal Act policies that provide for balancing maximum public access in a manner consistent with public safety and military security needs. In past reviews, the Commission has found that absent a nexus such as intensifications of public access closures, no new public access requirements are normally required. For the proposed exercises, the public area closures during the exercises, which are clearly necessary for both public safety and military needs, are similar to past closures from similar Navy testing. The proposal may even reduce closures, as one of the Navy's goals is to schedule more frequent simultaneously occurring exercises than previously scheduled. The Commission concludes that the existing military restrictions are necessary and consistent with Coastal Act policies, that the Navy is not proposing greater numbers or durations of closures, and that the project is consistent with the public access, recreation, and fishing policies (Sections 30210, 30212, 30234, and 30234.5) of the Coastal Act.

V. SUBSTANTIVE FILE DOCUMENTS:

1. Navy Consistency Determinations CD-20-95 (Navy San Clemente Island Cable Repair), CD-109-98 (Navy Advanced Deployable System (ADS) Ocean Tests), CD-95-97 and CD-153-97 (Navy, Low-Frequency Active (LFA) Sonar Research, Phases I and II), CD-2-01 (Navy Point Mugu Sea Range testing and training activities), CD-045-89 and CD-50-03 (Navy FOCUS Cable and Cable repairs, San Nicolas Island), and CD-37-06 (Navy Monterey Bay (MB) 06).

2. Island Night Lizard, 5-Year Review, U.S. Fish and Wildlife Service.

3. San Clemente Island Integrated Natural Resources Management Plan (INRMP), Navy, May 2002.

4. USGS Seismic Survey Consistency Determinations No. CD-14-02, CD-16-00 and CD-32-99.

5. Mobil Oil Pier and Wharf Decommissioning (Coastal Development Permit (CDP) No. E-96-14).

6. Monterey Bay Aquarium Research Institute (MBARI) (CDP No. E-05-007/Consistency Certification No. CC-076-05).

7. Consistency Determination No. CD-102-99, National Marine Fisheries Service, small test of "pulsed power" acoustic harassment device to protect recreational fishing from sea lions.

8. Consistency Certification CC-110-94/Coastal Development Permit Application 3-95-40, Scripps Institution of Oceanography, Acoustic Thermometry of Ocean Climate (ATOC) Project and Marine Mammal Research Program (MMRP).

9. High Energy Seismic Survey Review Process and Interim Operational Guidelines for Marine Surveys Offshore Southern California, the High Energy Seismic Survey Team (HESS), for the California State Lands Commission and the U.S. Minerals Management Service Pacific OCS Region, September 1996—February 1999.

10. Caltrans 10 Mile River Bridge Replacement, CDP No. 1-06-022/Public Works Plan 1-06-01/LCP Amendment A-1-MEN-98-017-A2.

11. Marine Mammal Populations and Ocean Noise: Determining When Noise Causes Biologically Significant Effects, National Research Council, Committee on Characterizing Biologically Significant Marine Mammal Behavior, Ocean Studies Board, 2005.

12. Finneran and Schlundt (2004)), Effects of Intense Pure Tones on the Behavior of Trained Odontocetes, Authors: J. J. Finneran; C. E. Schlundt; Space And Naval Warfare Systems Center, San Diego Ca, February 2004, J. Acoust. Soc. Am. 107(6), 3496-3508.

13. Nowacek et al. (2004), Atlantic right whales (Eubalaena glacialis) ignore ships but respond to alerting stimuli.

14. Letter dated 27 January, 2006, from Dr. Mark P. Johnson, Woods Hole Oceanographic Institution, to Keith Jenkins, U.S. Navy.

15. Federal Register Notice July 7, 2006, (NOAA, Navy RIMPAC): http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/06-6050.htm

16. Federal Register Notice March 24, 2006 and September 28, 2006 (Scripps): http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/E6-21611.htm http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/06-8353.htm

17. January 9, 2007, Staff Report Addendum for the January 10, 2007, Commission meeting, including letters (and attachments) to the Commission (and attachments) from the U.S. Navy (January 8, 2007), Natural Resources Defense Council (January 9, 2007), Linda Weilgart (January 8, 2007), and David Bain (January 9, 2006) (sic).

STATE OF CALIFORNIA-THE RESOURCES
AGENCY ARNOLD SCHWARZENEGGER, Governor

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January 11, 2007

Rear Admiral Len Hering
Department of the Navy
Commander Navy Region Southwest
Naval Facilities Engineering Command
937 North Harbor Drive
San Diego, CA 92132-0058

Re: CD-086-06, U.S. Navy Pacific Fleet's offshore and onshore military training exercises in southern California (JTFEX and COMPTUEX)

Dear Adm. Hering:

On January 10, 2007, by a vote of eight in favor, one opposed, the California Coastal Commission conditionally concurred with the above-referenced consistency determination for the Navy Pacific Fleet's offshore and onshore military training exercises in southern California (JTFEX and COMPTUEX).

During the hearing, the Commission adopted the following conditions:

Conditions:

1. **Safety Zones.** The Navy shall adopt safety zones (i.e., marine mammal preclusion zones) out to the distance at which the sonar has attenuated to 154 dB (received level (RL), expressed in decibels (re 1 $\mu Pa^2 \cdot s$)). The Navy will monitor the area and lower sonar levels (or delay transmissions until an animal has left the safety zone) such that marine mammals and sea turtles will not be exposed to received levels greater than 154 dB. If the 154 dB level cannot be feasibly achieved, the Navy shall either cease sonar transmissions should a marine mammal be detected within 2 km of the sonar dome, as the Navy has currently agreed to for its SURTASS LFA sonar operations, or the Navy shall provide the Commission with sufficient information about the sonar intensities and attenuation rates, and the maximum capabilities of its monitoring, to enable the Commission to determine that the Navy will protect a safety zone as close as is possible to the 154 dB zone. The Navy shall provide this information to the Commission staff for review and approval by the Executive Director prior to the first exercise involving mid-frequency sonar.

2. **Surveillance.** Surveillance shall include two dedicated NOAA-trained marine mammal observers at all times during use of mid-frequency sonar.

3. **Training.** The Navy shall employ the RIMPAC-derived measures, which state:

NMFS Approved Training

- Navy shipboard lookouts shall be qualified watchstanders who have completed marine species awareness training.

-Navy watchstanders will participate in marine mammal observer training approved by NMFS.

4. Passive Acoustic Monitoring. Passive acoustic monitoring will be used to enforce safety zones. All personnel engaged in passive acoustic sonar operations during an exercise employing mid-frequency sonar shall monitor for marine mammals and report the detection of any marine mammal to the appropriate watch station for dissemination and appropriate action.

5. Aerial Monitoring. The Navy shall ensure that aircraft operating in the Navy's instrumented range off San Clemente will monitor the area for marine mammals during their assigned missions and will monitor the area throughout any mid-frequency sonar exercises on the instrumented range. All other aircraft flying low enough to reasonably spot a marine mammal will watch for marine mammals. The Navy shall require that all aerial sightings of marine mammals be reported to the appropriate watch stations for appropriate action. Appropriate action means taking mitigation measures and disseminating the information to other units and watchstanders for increased situational awareness.

6. Gray Whale Migration Season. To the maximum extent feasible, the Navy shall locate and schedule training outside the gray whale migration season, where the sonar is near enough to known or observed gray whale migration paths to expose gray whales to sonar levels above 154 dB. If conducting exercises during the migration season the Navy shall avoid known gray whale migration corridors.

7. Areas of High Marine Mammal Populations. To the maximum extent feasible, the Navy shall avoid train-

ing in areas with known high concentrations of marine mammals, including but not limited to:

avoiding active sonar transmissions within the National Marine Sanctuaries off California's coast (e.g., the Channel Islands NMS); and

avoiding seamounts and coastal areas with complex, steep seabed topography, except on the Navy's instrumented range off San Clemente Island.

8. Night and low visibility conditions. The Navy shall employ the RIMPAC-derived measures, which state[1]:

Low visibility conditions (i.e., whenever the entire safety zone cannot be effectively monitored due to nighttime, high sea state, fog or other factors) - The Navy will use additional detection measures, such as infrared (IR) or enhanced passive acoustic detection. Except in extraordinary circumstances, the Navy will power down sonar by 6 dB as if marine mammals were present in the zones it cannot see.

9, Stranding Response and Reporting. The Navy shall employ the RIMPAC-derived measures, which state:

• The Navy will coordinate with the NMFS Stranding Coordinator for any unusual marine mammal be-

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[1] In fact, the U.S. Marine Mammal Commission has specifically recommended that, "given the limitations of night vision devices (based on [NMFS'] assessment in its previous Federal Register notices) and passive acoustic monitoring," the Navy observe a mandatory power-down in low-visibility conditions, assuming it cannot simply avoid them (MMC 2006). (Comments from Tim Ragen, Acting Executive Director, Marine Mammal Commission, to P. Michael Payne, Chief of the Permits Division, NMFS, on the Navy's 2006 Rim of the Pacific (RIMPAC) Exercise.)

havior, including stranding, beached live or dead cetacean(s), floating marine mammals, or out-of-habitat/milling live cetaceans that may occur at any time during or shortly after major exercises.

• The Navy will provide a report to NMFS after the completion of a major exercise that includes:

- An assessment of the effectiveness of these mitigation and monitoring measures with recommendations of how to improve them.

- Results of the marine species monitoring during the major exercise. As much unclassified information as the Navy can provide including, but not limited to, where and when sonar was used (including sources not considered in take estimates, such as submarine and aircraft sonars) in relation to any measured received levels, source levels, numbers of sources, and frequencies, so it can be coordinated with observed cetacean behaviors. If necessary, classified information may be provided to NMFS personnel with an appropriate security clearance and need to know.

10. Surface Ducting Conditions. During significant surface ducting conditions, as defined by NMFS (2006), the Navy shall power down the sonar source by 6 dB. The Navy shall assess whether surface ducting conditions are present at least once hourly during periods as specified by NMFS (and as discussed on page 3 of the NMFS IHA for RIMPAC (Exhibit 13)).

11. Choke-point exercises. - Prior to approving a proposed choke-point exercise, Navy commands shall consult with OPNAV N45.

- The Navy will provide NMFS (Stranding Coordinator and Protected Resources, Headquarters) with information regarding the time and place for the choke-point exercises in advance of any proposed choke-point exercise.

- The Navy and NMFS will mutually agree upon whether non-Navy observers are required.

- The Navy will coordinate a focused monitoring effort around the choke-point exercises, to include pre-exercise monitoring (2 hours), during-exercise monitoring, and post-exercise monitoring (1-2 days). This monitoring effort will include at least one dedicated aircraft or one dedicated vessel for realtime monitoring from the pre- through post-monitoring time period, except at night, with the vessel or airplane maintaining regular communication with a Tactical Officer with the authority to shutdown, power-down, or delay the start-up of sonar operations. These monitors will communicate with the Navy command to ensure the safety zones are clear prior to sonar start-up, to recommend power-down and shut-down during the exercise, and to extensively search for potentially injured or stranding animals in the area and down current of the area post-exercise.

12. Mine Shape Retrieval. To the maximum extent feasible, the Navy shall retrieve inert mine shapes dropped.

13. Monitoring Reports. In addition to the above, as agreed to previously, all monitoring results provided to NMFS (unless classified) shall be submitted to the Commission staff.

14. Baseline Monitoring. The Navy shall perform pre-exercise monitoring commencing 30 minutes prior to commencement of mid-frequency sonar use.

The Commission found the project, as conditioned, to be consistent to the maximum extent practicable with the California Coastal Management Program. The basis under the enforceable policies of the Coastal Act for the conditions was contained in the staff recommendation mailed for the January 10, 2007, Commission meeting, supplemented by the addendum given the Navy on January 10, 2007. The Commission notes that as provided in 15 CFR § 930.4(b), if the Navy does not agree with the Commission's conditions of concurrence, then all parties shall treat this conditional concurrence as an objection. The Commission's decision was timely, as the action occurred within the 75-day review period and the Commission staff had requested the automatic 15-day extension (pursuant to 15 CFR § 930.41(b)).

The federal consistency regulations further provide:

> *(a) Federal agencies, . . . should cooperate with State agencies to develop conditions that, if agreed to during the State agency's consistency review period and included in a Federal agency's final decision under Subpart C . . . would allow the State agency to concur with the federal action. If instead a State agency issues a conditional concurrence:*
>
> *(1) The State agency shall include in its concurrence letter the conditions which must be satisfied, an explanation of why the conditions are necessary to ensure consistency with specific enforceable policies of the management program, and an identification of the specific enforceable policies. The State agency's concurrence letter shall also inform the*

parties that if the requirements of paragraphs (a)(1) through (3) of the section are not met, then all parties shall treat the State agency's conditional concurrence letter as an objection pursuant to the applicable Subpart . . . ; and

(2) The Federal agency (for Subpart C) . . . shall modify the applicable plan [or] *project proposal, . . . pursuant to the State agency's conditions. The Federal agency . . . shall immediately notify the State agency if the State agency's conditions are not acceptable; and*

. . .

(b) If the requirements of paragraphs (a)(1) through (3) of this section are not met, then all parties shall treat the State agency's conditional concurrence as an objection pursuant to the applicable Subpart.

In addition, 15 CFR §930.43(d) and (e) further provide:

(d) In the event of an objection, Federal and State agencies should use the remaining portion of the 90-day notice period (see §930.36(b)) to attempt to resolve their differences. If resolution has not been reached at the end of the 90-day period, Federal agencies should consider using the dispute resolution mechanisms of this part and postponing final federal action until the problems have been resolved. At the end of the 90-day period the Federal agency shall not proceed with the activity over a State agency's objection unless: (1) the Federal agency has concluded that under the "consistent to the maximum extent practicable" standard described in section 930.32 consistency with the enforceable policies of the management program is prohibited by exist-

ing law applicable to the Federal agency and the Federal agency has clearly described, in writing, to the State agency the legal impediments to full consistency (See §§930.32 (a) and 930.39(a)), or (2) the Federal agency has concluded that its proposed action is fully consistent with the enforceable policies of the management program, though the State agency objects.

(c) If a Federal agency decides to proceed with a Federal agency activity that is objected to by a State agency, or to follow an alternative suggested by the State agency, the Federal agency shall notify the State agency of its decision to proceed before the project commences.

If you have any questions, please feel free to call me at (415) 904-5289.

Sincerely,

MARK DELAPLAINE

MARK DELAPLAINE
Federal Consistency Supervisor

cc: San Diego District Office
U.S. Navy (Delphine Lee, Jenny Marshall, Daniel Eldridge)
OCRM (David Kaiser)
NOAA Fisheries, Long Beach (Monica DeAngelis, Christina Fahy)

2006 Rim of the Pacific Exercise
After Action Report:

Analysis of the Effectiveness of the Mitigation and Monitoring Measures as Required Under the Marine Mammal Protection Act (MMPA) Incidental Harassment Authorization and National Defense Exemption from the Requirements of the MMPA for Mid-Frequency Active Sonar Mitigation Measures

Dated December 7, 2006

* * * * *

* * * * *

SECTION 2 SUMMARY

During RIMPAC 06, there were 472 total hours of mid-frequency active sonar (MFAS) use. There were no reported observations of behavioral disturbance of marine mammals during the exercise. The Navy's previously developed and used mitigation measures from PMAP, as modified for RIMPAC 06, appeared to be effective in protecting marine mammals observed near exercise ships. Mitigation measures agreed to for issuance of the IHA that went beyond standard Navy measures had no observable effect on protection of marine mammals in this exercise, and their application unnecessarily increased the cost of the exercise or had a negative effect on the fidelity of training.

As the first major exercise for which Navy applied for an authorization under MMPA, RIMPAC '06 presented unique challenges from the perspective of regulatory requirements and public perception. We anticipate that future authorizations for exercises and operating area coverage will recognize the differences in those areas as well as how developing scienee will inform our understanding of the role of mitigation measures.

* * * * *

In summary, there were 13 sightings of marine mammals from the air over approximately 18 hours of flight time. Shore based observation for 80 hours of effort by two people produced five sightings of a resident pod of spinner dolphins over five consecutive days on Kauai and a pod of bottlenose dolphins offshore of

Hawaii Island. The results of these monitoring efforts provided no evidence of indicating there were any effects on the detected marine mammals as a result of the ASW exercises, which took place in the adjacent channels.

* * * * *

Prepared for
National Marine Fisheries Service
Office of Protected Resources

Prepared by
Department of the Navy

In accordance with
National Defense Exemption 30 June 2006

USS Boxer ESG-5

COMPOSITE TRAINING UNIT EXERCISE
(C2X 06-03)

July 2006

and

JOINT TASK FORCE EXERCISE 06-04
(JTFEX 06-04)

10-17 Aug 2006

After Action Report

Analysis of the Effectiveness of the Mitigation and Monitoring Measures as Required Under the National Defense Exemption from the Requirements of the Marine Mammal Protection Act for Certain DoD Mid-Frequency Active Sonar Activities

* * * * *

CONCLUSIONS

In summary, there were 11 sightings of 230 marine mammals from surface vessels during JTFEX 06-04 (Table 1, Figure 1), while no sightings were reported for C2X 06-03. All behaviors described in the after action report were within the range of apparently normal behaviors. The results of these monitoring efforts provided no evidence indicating there were any effects on the detected marine mammals as a result of the ASW exercises taking place.

Prepared for
National Marine Fisheries Service
Office of Protected Resources

Prepared by
Department of the Navy

In accordance with
National Defense Exemption 30 June 2006

USS Stennis CSG

COMPOSITE TRAINING UNIT EXERCISE 06-04

(C2X 06-04)

20 Sep – 12 Oct 2006

After Action Report

Analysis of the Effectiveness of the Mitigation and Monitoring Measures as Required Under the National Defense Exemption from Requirements of the Marine Mammal Protection Act for Certain DoD Mid-Frequency Active Sonar Activities

* * * * *

CONCLUSIONS AND SUMMARY

- Marine mammals were sighted 73 times by exercise participants. Approximately 1225 animals were observed within Southern California waters (Table 1, Figure 1). In each of these cases, the marine mammals were detected by Navy watchstanders operating in accordance with Navy standard operational

procedures and as reiterated by some NDE mitigation measures.

- Of the 73 instances where marine mammals were detected, MFAS was not operating in 63 events and there were no mandated sonar shut downs.
- MFAS was secured five times representing a 7% loss of ASW training opportunities, as well as potentially interrupting the tactical situational awareness of the participating units and CSG (Figure 2).
- There were no indications of any effects to any marine species throughout the exercise. All behaviors described in the after action report were within the range of apparent normal behavior.

Prepared for
National Marine Fisheries Service
Office of Protected Resources

Prepared by
Department of the Navy

In accordance with
National Defense Exemption 30 June 2006

USS Stennis CSG

JOINT TASK FORCE EXERCISE 07-01

(JTFEX 07-01)

07-16 Nov 2006

After Action Report

Analysis of the Effectiveness of the Mitigation and Monitoring Measures as Required Under the National Defense Exemption from the Requirements of the Marine Mammal Protection Act for Certain DoD Mid-Frequency Active Sonar Activities

* * * * *

CONCLUSIONS AND SUMMARY

- Marine mammals were sighted 18 times by exercise participants. Approximately 140 animals were observed within Southern California waters (Table 1, Figure 1). In each of these cases, the marine mammals were detected by Navy watchstanders operating in accordance with Navy standard operational

procedures and as reiterated by some NDE mitigation measures.

- Of the 18 instances where marine mammals were detected, MFAS was not operating in 15 events and there were no mandated sonar shut downs.
- MFAS was secured three times representing a 17% loss of ASW training opportunities from sighting events, as well as potentially interrupting the tactical situational awareness of the participating units and CSG (Figure 2).
- There were no indications of any effects to any marine species throughout the exercise. All behaviors described in the after action report were within the range of normal behaviors.
- Mitigation measures required by the Navy, which were in addition to Navy SOP protective measures, did not provide any demonstrated increased protection to marine mammals. Administration of the additional mitigation measures distracted exercise participants, watchstanders, and exercise commanders at the headquarters level from their primary responsibility of exercise training and safety. While these personnel seemed to adequately absorb this increased workload, there were no indications the hypersensitivity the additional mitigation measures required provided any additional protection to marine mammals.

Prepared for
National Marine Fisheries Service
Office of Protected Resources

Prepared by
Department of the Navy

In accordance with
National Defense Exemption 30 June 2006

USS Nimitz CSG

COMPOSITE TRAINING UNIT EXERCISE 07-01

(C2X 07-01)

19 Nov- 19 Dec 2006

After Action Report

Analysis of the Effectiveness of the Mitigation and Monitoring Measures as Required Under the National Defense Exemption from the Requirements of the Marine Mammal Protection Act for Certain DoD Mid-Frequency Active Sonar Activities

* * * * *

CONCLUSIONS AND SUMMARY

- Marine mammals were sighted 48 times by exercise participants. Approximately 376 animals were observed within Southern California waters (Table 1, Figure 1). In each of these cases, the marine mammals were detected by Navy watchstanders operating in accordance with Navy standard operational procedures and as reiterated by NDE mitigation measures.

- Of the 48 instances where marine mammals were detected, MFAS was not operating in 32 events and there were no mandated sonar shut downs.

- MFAS was secured ten times representing a 15% loss of ASW training opportunities for sighting events, as well as potentially interrupting the tactical situational awareness of the participating units and CSG (Figure 2).

- There were no indications of any effects to any marine species throughout the exercise. All behaviors described in the after action report were within the range of normal behaviors.

- Mitigation measures required by the Navy, which were in addition to Navy SOP protective measures, did not provide any demonstrated increased protection to marine mammals. Administration of the additional mitigation measures distracted exercise participants, watchstanders, and exercise commanders

at the headquarters level from their primary responsibility of exercise training and safety. While these personnel seemed to adequately absorb this increased workload, there were no indications the hypersensitivity the additional mitigation measures required provided any additional protection to marine mammals.

Prepared for
National Marine Fisheries Service
Office of Protected Resources

Prepared by
Department of the Navy

In accordance with
National Defense Exemption 23 January 2007
Biological Opinion 09 February 2007

Department of the Navy

SOUTHERN CALIFORNIA COMPOSITE TRAINING UNIT EXERCISE / JOINT TASK FORCE EXERCISE

Combined After Action Report
February-March 2007

FINAL

28 June 2007

Abstract

This report presents an analysis of the effectiveness of the mitigation and monitoring measures as required under the Biological Opinion on the U.S. Navy's Proposed Composite Unit Training Exercises and Joint Task Force Exercises Off Southern California From February 2007 to January 2009

AND

Discussion of the nature of effects, if observed, under the National Defense Exemption from the Requirements of the Marine Mammal Protection Act (MMPA) for Mid-Frequency Active Sonar

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* * * * *

CONCLUSIONS AND SUMMARY

- Marine mammals were sighted 138 times by exercise participants during COMPTUEX 07-02, JTFEX 07-03, and JTFEX 07-05. These sightings reported approximately 2,014 animals.
- In each of these cases, the marine mammals were detected by Navy watchstanders in accordance with Navy standard operational procedures and as reiterated by NDE mitigation measures.
- Observations of marine species and their behaviors, as previously detailed, showed no unusual behaviors due to MFAS use. There were no indications from the observations reported that the presence of exercise participants had any affect [*sic*] on any marine mammals. The U.S. Navy acknowledges that it is difficult to assess the potential exposure to sonar for species not observed, but is willing to address this challenge by integrating other monitoring elements in accordance with the BO.

- There were no ship strikes on marine mammals during these exercises and 13 instances where U.S. Navy vessels maneuvered to avoid crossing a marine mammal's path and increase the separation between the ship and animal.
- In approximately 88% of the instances where marine mammals were detected during COMPTUEX 07-02, JTFEX 07-03, and JTFEX 07-05, MFAS was not operating and there were no mandated sonar shut downs.
- Between combined COMPTUEX 07-02, JTFEX 07-03, and JTFEX 07-05 events, MFAS was secured eight times representing an approximately 6% loss of ASW training opportunities, as well as potentially interrupting the tactical situational awareness of the participating units and ESG/CSG.
- For COMPTUEX 07-02, JTFEX 07-03, and JTFEX 07-05, when marine mammals were observed within 1000 yards of a MFAS ship using sonar regardless of the species, sonar power was either reduced or secured per the mitigation measures until the animals clear the area or the range between the ship and animals increases.
- Improvements to the U.S. Navy lookout reporting procedures will be implemented for future exercises to better capture metrics on weather conditions during the sighting, and more detailed observations of animal behavior.

- The U.S. Navy is committed to development of robust exercise and long-term range complex monitoring plans that will integrate multiple tools in order to provide better assessment of marine mammal occurrence and possible MFAS effects, or lack of effects. FY08 plans may include various mixes of ship and aerial surveys independent of exercise participants, validation by experienced biologist(s) on lookout effectiveness in observing marine mammals, and use of new research and development technologies to advance the state of marine mammal monitoring.

* * * * *

Prepared for
National Marine Fisheries Service
Office of Protected Resources

Prepared by
Department of the Navy

In accordance with
National Defense Exemption 23 January 2007
Biological Opinion 09 February 2007

Department of the Navy

SOUTHERN CALIFORNIA COMPOSITE TRAINING UNIT EXERCISE 07-7

After Action Report
September 2007

PRELIMINARY DRAFT CPF SUBMITTAL

4 January 2008

Abstract

This report presents an analysis of the effectiveness of the mitigation and monitoring measures as required under the Biological Opinion on the U.S. Navy's Proposed Composite Unit Training Exercises and Joint Task Force Exercises Off Southern California From February 2007 to January 2009

AND

Discussion of the nature of effects on marine mammals, if observed, under the National Defense Exemption from the Requirements of the Marine Mammal Protection Act (MMPA) for Mid-Frequency Active Sonar

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EXECUTIVE SUMMARY

- This reports summarizes marine mammal sightings and assessment of mitigation effectiveness for the U.S. Navy's Composite Unit Training Exercise (COMPTUEX) 07-7 conducted by the USS Tarawa Expeditionary Strike Group (ESG) from 7 to 21 September 2007 within the offshore waters of Southern California.
- During COMPTUEX 07-7, there were a total of 57 sightings of marine mammals for an estimated total of 289 animals.
- There were four cases of these 57 sightings when surface ship mid-frequency active sonar (MFAS) was in use, but turned off (secured) upon initial marine mammal sightings and until the animals left the area. One case occurred at a range of 3000 yards which is greater than the safety zones specified within the 23 January 2007 National Defense Exemption (NDE).
- Four potential ESA-listed whales were sighted at 50 yards during MFAS transmission and could have potentially been exposed to (Sound Exposure Level) SEL greater than 173 dB re 1 μPa^2 s. The vessel immediately secured MFAS on sighting and stopped to allow the whales to clear the area. No apparent abnormal behavior from the animals was reported. Two cases involved schools of non-ESA-listed dolphins or por-

poise sighted near and approaching MFAS- vessels, which secured sonar on first report of the sighting and kept the sonar off until the animals had departed.

- No marine mammal ship strikes occurred during COMPTUEX 07-7. There were three reports of U.S. Navy ships proactively maneuvering to avoid close encounters with marine mammals, providing evidence that these marine mammal mitigation measures are well-understood by Fleet operators and actively executed in operational practices.
- For all of COMPTUEX 07-7 marine mammal sightings, there was no obvious indication or report that any animal behaved in a manner not associated with normal movement, or foraging, recognizing that the level of biological information obtained is limited at this time.
- Based on visual reports of marine mammals from U.S. Navy lookouts during COMPTUEX 07-7, the U.S. Navy's COMPTUEX/JTFEX Environmental Assessment/Overseas Environmental Assessment (EA/OEA) acoustic modeling appears to very conservatively overestimate the amount of potential acoustic exposures, including those to Endangered Species Act (ESA) listed species. The degree of variability and over predictive nature inherent within these acoustic impact models is based largely on the significant natural variability within the science of at-sea marine mammal surveys used to derive density estimates, and other model limitations.
- The U.S. Navy is developing robust and operationally feasible exercise and long-term range complex monitoring plans that will attempt to integrate multiple

tools and new technologies if applicable in order to provide better assessment of marine mammal occurrence, improved detection, and lead to a more science based determination of MFAS effects, or lack of effects.

* * * * *

[Royal Australian Navy] [Seal Omitted]

Planning Guide: 16

MARITIME ACTIVITIES ENVIRONMENTAL MANAGEMENT PLAN

SONAR AND MULTISTATICS TRIALS

Activity: Research, development, test and evaluation trials involving active sound sources, transmitting at frequencies from 1 Hz to 100 kHz and source power levels (SPLs) greater than 200 dB (re 1 μPa at 1 m)*. This Planning Guide also provides guidance for the planning and conduct of multistatics trials using explosive sources.

* No specific planning or mitigation measures are required for active acoustic systems with operating parameters outside of these values.

Aspects of the planned activity of potential environmental concern:

- Interference with marine fauna, especially cetaceans (NB: as a general guide, baleen whales are considered most sensitive to frequencies in the range 0.01 kHz to 30 kHz, and toothed whales 1 kHz to 150 kHz. Actual sensitivity for a given frequency varies between species).
- Acoustic disturbance of dugongs (1 kHz to 8 kHz), turtles (< 1 kHz) and seals (2 kHz to 16 kHz).

Potential sources of environmental disturbance:

- Emissions of high-power sonar, especially at frequencies below 30 kHz.
- Explosive impulses from SUS charges.

- Low-flying aircraft (if also used in trials).

Impact avoidance/mitigation measures:

- So far as practicable, avoid whale migration routes and aggregation areas during periods of whale activity (refer to WAXA and EAXA Environmental Planning Handbooks) for explosive sources (e.g. SUS charges) and systems operating at 30 kHz or below. Times and periods of principal concern are:
  - within 30 nm of the coast in the WAXA and the EAXA over the period May to November;
  - R279 of the SAXA over the period May to November;
  - the NWXA and Great Barrier Reef areas (especially the Capricorn Channel) over the period June to September; and
  - R119C1 and R119C4 of the WAXA over the period December to May.
- So far as practicable, avoid areas within 5 nm of the continental shelf break, seamounts and canyons.
- Instruct officer-in-charge of trials to establish a 4000 yd radius cetacean exclusion zone around emitter, or otherwise as promulgated in Procedure Cards S1, S2, S3 and S5 to S11. Trial procedures are to include appropriate sonar propagation modeling, using TESS II, to check adequacy of designated cetacean exclusion zone with regard to 160 dB received level, especially if trials are planned for waters less than 500 m deep.

- Trials are to be suspended/aborted if cetaceans impinge upon designated exclusion zone.
- If conducting trials with emitters operating at frequencies below 10 kHz in tropical areas in waters less than 100 m deep, the officer-in-charge of trials is to ensure suitable look out is maintained for dugongs out to a distance of 1,000 yds, with emissions to be suspended if dugongs are sighted within this zone.
- If conducting trials in tropical areas with emitters operating at frequencies below 1 kHz, the officer-in-charge of trials is to ensure suitable look out is maintained for turtles out to a distance of 500 yds, with emissions to be suspended if turtles are sighted within this zone. Trials should not be conducted within 1 nm of turtle nesting beaches during nesting or hatching periods (see Table below).
- If conducting trials with emitters operating at frequencies from 2 kHz to 20 kHz in coastal waters within 5 nm of seal breeding sites, the officer-in-charge of trials is to ensure suitable look out is maintained for seals out to a distance of 500 yds, with emissions to be suspended if seals are sighted within this zone (refer to WAXA and EAXA Environmental Planning Handbooks).
- In all cases, preference should be given to conducting trials during daylight conditions, especially if operating in areas where whales are likely to be encountered, to promote the effectiveness of visual mitigation measures.

- If suitable passive acoustic systems are available, mitigation measures should also employ passive acoustic surveillance to augment visual mitigation measures. To be considered suitable, a passive acoustic surveillance system should have:
    - appropriate frequency coverage to be able to detect vocalizations of the species of concern (eg. 0.01 kHz to 30 kHz for baleen whales; 30 kHz to 50 kHz for beaked whales; 1 kHz to 150 kHz for toothed whales);
    - sufficient range and bearing discrimination to determine if a detected vocalization emanates from a cetacean actually within the set exclusion zones (eg. within 4000 yds for a hull mounted ASW sonar, or 500 yds for a mine-hunting sonar operating at frequencies above 100 kHz) to limit the possibility of false returns and subsequent unnecessary suspension or abandonment of trials activities; and
    - appropriately trained and experienced operators, and/or automatic detection systems to limit the frequency of false returns.

Permit and Assessment Requirements:

- Consult relevant REO at least three months prior to planned date of trials to initiate procedures, if required, for issuing of ECC or higher level of assessment.

Associated Planning Guides:

1, 6

Associated Procedure Cards:

PS1, PA1, PA2, SI, S2, S3, S5, S6, S7, S8, S9, S10, Sll, IR1, IR2, M2, M3, M4, M5, M8

Turtle Breeding Periods and Major Nesting Areas

Species	Nesting Season	Hatching Season	Major Nesting Sites (and Concurrent Exercise Areas)
Green	late October to February	December to May	SWBTA and NWXA (Monte Bello Islands, Barrow Island)
Loggerhead	late October to early March, peaks in December	December to April	SWBTA and NWXA (Murion Islands)
Hawksbill	year round, mainly November to February, peaks in January (GBR); July to September (Arnhem Land)	year round, mainly February to April	SWBTA, north east Arnhem Land (NAXA)
Leatherback	December to January	February to March	Nil major areas in Australia. Minor nesting occurs around SWBTA and Arnhem Land (NAXA)
Flatback	October to February	December to April	SWBTA
Olive Ridley	Year round, mainly April to November	Year round, mainly June to January	Nil major areas in Australia. Minor nesting occurs in north west Arnhem Land (NAXA)

NB: Table is indicative only. Turtle nesting may also occur in Cowley Beach Training Area, but this is not recognised as a key location.

[Royal Australian Navy]
[Seal Omitted]

Procedure:
S1

MARITIME ACTIVITIES
ENVIRONMENTAL MANAGEMENT PLAN

Activity: Operation of Spherion B, Spherion MFS, SQS-56 and Mulloka hull-mounted ASW sonars (active mode only).

Potential environmental impacts:

- Disturbance to cetaceans, particularly baleen and beaked whales.

Baleen whales most likely to be encountered in exercise areas are humpbacks, blues, southern rights and minkes. The risk of acoustic disturbance is heightened when conditions support extended sonar propagation ranges, although only direct path transmissions are considered to represent any real risk; modeling suggests that the risk of adverse effects within convergence zones is unlikely.

NB: The presence of dolphins, including any which may riding in a ship's bow wave or wake, does not require implementation of environmental safeguard measures for ASW sonar.

Responsibility: PWO

Impact avoidance/mitigation measures:

- To the greatest extent practicable, avoid sonar transmissions with source levels above 210 dB (re 1 μPa - 1 m) within 30 nm of the coastline in both the WAXA and EAXA over the period May to November, SWBTA and the NWXA over the period

July to September, and in R119C1 and R119C4 of the WAXA over the period December to May.

- Before commencing sonar activities assess sonar propagation characteristics using TESS II. If the range prediction indicates that received levels will exceed 160 dB at ranges greater than 4000 yds, especially if surface ducting is likely, consideration should be given to reducing transmitter source power levels by 3 dB to 6 dB, if system controls permit.
- Maintain effective lookout for whales in area of ship out to a range of 4000 yds, beginning 30 minutes before commencing transmissions. Any whales sighted in this period are to be monitored.
- Ensure at least 4000 yd separation between ship and nearest whale at time of serial commencement. Maintain 4000 yd separation between ship and nearest whale during serial.
- Suspend sonar transmissions if whale is sighted at less than 4000 yd range from ship. Transmissions should not be resumed until range from ship to nearest whale has opened to 4000 yds.
- In conditions of limited visibility (e.g. night, mist), Command is to make reasoned decision based upon most recent observations and reports of whale activity in the operating area, and adopt reasonable risk mitigation measures based upon predicted whale presence. The use of other sensors, such as optoelectronic and infrared devices, should be considered and employed if practicable.

Alternatively (for systems capable of selectable sectoral transmission):

Change transmission mode so that sector where whale/s occur within 4000 yds is blanked, for at least 45° either side of the bearing to the whale/s, ensuring whales in blanked area come no closer than 2000 yds to ship. If whales come closer than 2000 yds then all transmissions should cease until adequate separation distance is regained.

NB: No restrictions apply to the use of sonar in passive mode.

Environmental safeguards:

General Safeguards

If significant whale activity is noted in the immediate vicinity of the ship such that establishing and maintaining a 4000 yd separation is difficult, discretion resides with the CO to decide how best to proceed with planned serial, or if serial should be rescheduled. In making any such determination, the CO is to consider species of whales involved, noting that baleen whales (eg. humpbacks, southern right and blue) and beaked whales are considered most susceptible to active ASW sonar.

Beaked Whale Protection

When operating in or near water less than 2000 m deep, the chart is to be checked to determine if the ship will be operating within 5 nm of any seamounts or within 5 nm to seaward of any steep rises (i.e. with a gradient of 1:10 or greater), undersea canyons or trenches.

If so, assess sonar propagation characteristics using TESS II. If the range prediction indicates that received

levels will exceed 160 dB at ranges greater than 4000 yds, then sonar transmissions in the direction of the seamount, steep gradient or other underwater terrain feature should be blanked (if practicable) or attenuated by 3 dB to 6 dB (if system controls permit) whenever ship is within 5 nm to seaward of the steep grade or other feature. These restrictions do not apply if the ship is on the upslope side of the steep grade.

Command should note that visual surveillance for beaked whales is largely ineffective, owing to their small size and extended dive profiles. This underscores the importance of other risk reduction measures, as outlined above.

Shallow Marine Embayments

When operating in shallow marine embayments (e.g. Jervis Bay, Shoalwater Bay, Cockburn Sound):

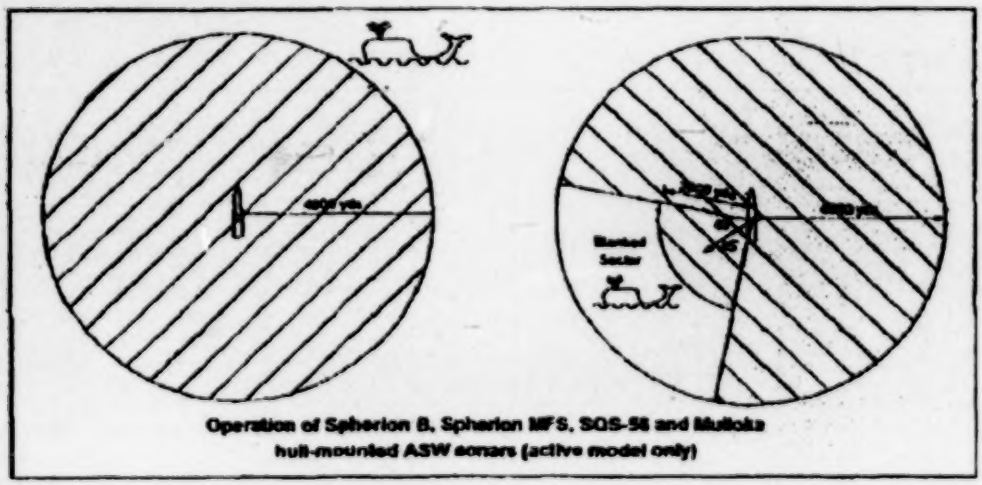
- Reduce transmitter source power levels to the lowest practicable level. This is to reduce the risk of extended propagation ranges causing disturbance to marine biota or nearby recreational users (e.g. SCUBA divers).
- If practicable, avoid transmission if civilian boats are within 2,000 yds of the ship (to minimise risk to public reputation, rather than any specific ecological risk).
- Hull-mounted ASW sonar transmissions should be kept to a minimum in shallow marine embayments. Avoid conducting DSOTS in these areas if not strictly necessary.

Recording, monitoring & reporting:

In the event of any incursion of a whale or dolphin within the designated exclusion zones while transmitting on ASW sonar, ships are to report incident by signal to AUSFLTSAFETY (SIC I2C/ESL), reporting date/time, position, nature of incident, avoidance action taken, type of marine animal involved (if known) and any observed response.

Other references:

Related procedures:



Operation of Spherion B, Spherion MFS, SQS-56 and Mulloka hull-mounted ASW sonars (active model only)

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

[JAN 30 2006]

Mr. Keith Jenkins
Naval Facilities Engineering Command Atlantic
Code EV21KJ
6506 Hampton Boulevard
Norfolk, VA 23508-1278

Re: Draft Overseas Environmental Impact Statement/Environmental Impact Statement for the Department of Navy's Undersea Warfare Training Range

Dear Mr. Jenkins:

The National Oceanic and Atmospheric Administration (NOAA) has reviewed the Draft Overseas Environmental Impact Statement/Environmental Impact Statement (DOEIS/DEIS) for the Department of Navy's Undersea Warfare Training Range (USWTR) and provides the following comments for consideration by the Department of Navy.

Thank you for the opportunity to comment on the DEIS. NOAA appreciates its inclusion as a cooperating agency on the USWTR EIS, as well as the level of scoping and analysis that have gone into both the DEIS and the MMPA application for an incidental take authorization for this action. NOAA has four significant concerns regarding the proposed activity: 1) the threshold for sub-

TTS behavioral disturbance; 2) the potential for injury or mortality of certain marine mammal species *(e.g.*, beaked whales); 3) the potential for impact to the North Atlantic right whale; and 4) mitigation and monitoring.

Sub-TTS Behavioral Disturbance Threshold

In the Navy DEIS, the Navy proposes using a received sound exposure level (SEL) threshold of 190 dB re $1\mu Pa^2$-s for sub-TTS behavioral disturbance. As NOAA and the Navy have been discussing for several years in the preparation of the Navy DEIS, the Navy is using laboratory data on captive, food-reinforced cetaceans from Finneran and Schlundt (2004) as a justification for the 190 dB re $1\mu Pa^2$-s behavioral disturbance threshold for free-ranging marine mammals. This value was derived as follows:

Finneran and Schlundt (2004) analyze behavioral observations from related TTS studies (Schlundt *et al.*, 2000; Finneran *et al.*, 2001; 2003) to calculate cetacean behavioral reactions as a function of known noise exposure. During the TTS experiments, 4 dolphins and 2 white whales were exposed during a total of 224 sessions to 1-s pulses between 160 and 204 dB re $1\mu Pa$ (root-mean-square (rms) sound pressure level (SPL)), at 0.4, 3, 10, 20, and 75 kHz. Finneran and Schlundt (2004) evaluated the behavioral observations in each session and determined whether a "behavioral alteration" (ranging from modifications of response behavior during hearing sessions to attacking the experimental equipment) occurred. For each frequency, the percentage of sessions in which behavioral alterations occurred was calculated as a function of received noise SPL. By pooling data across individuals and test frequencies, respective SPL

levels coincident with 25, 50, and 75 percent likelihood of behavioral alteration were determined (Table 1). The Navy chose 190 dB re 1 μPa SPL, the point at which 50 percent of the exposures to 3, 10, and 20 kHz tones were estimated to result in behavioral alteration, as their proposed threshold for sub-TTS behavioral disturbance.

Frequency group (kHz)	25%	50%	75%
3	184	192	200
10	177	182	186
20	183	191	200
75	175	181	188
3, 10, 20	180	190	199
0.4, 3, 10, 20, 75	173	189	204

Table 1 (as presented in Finneran and Schlundt (2004)). Exposure SPLs (dB re 1 mPa) corresponding to 25, 50, and 75% of sessions with altered behavior for the different frequency groups. Results are for pooled white whale and dolphin data.

The 50 percent behavior alteration level for 3, 10, and 20 kHz tones of 190-dB SPL was converted to a sound exposure level (SEL) criterion of 190 dB re 1 μPa^2-s (the numerical values are identical because exposure durations were 1-s). The use of SEL enables accounting for exposure duration and the accumulation of energy over multiple exposures. Further, it provides consistency with the upper Level-B Harassment (TTS) and Level A Harassment (PTS) effects thresholds, which are also expressed in SEL. NOAA concurs with the several ad-

vantages of SEL as a relevant metric for marine mammal noise exposure, but feels an alternative and more conservative interpretation of the laboratory observations is required.

The Navy contends that the Finneran and Schlundt (2004) analysis provides the most appropriate data (as opposed to field observations of free-ranging marine mammals) to use to develop the behavioral effects threshold because: 1) researchers had superior control over and ability to quantify noise exposure conditions; 2) behavioral patterns of exposed marine mammals were readily observable and definable; 3) fatiguing noise consisted of tonal noise exposures with frequencies contained in the tactical mid-frequency sonar bandwidth; and 4) the species involved were closely related to the majority of the animals expected to be affected by mid-frequency sonar in the Navy's U.S. East Coast operating areas.

Consistent with opinions expressed orally and in writing over the past several years in the context of the Navy DEIS, NOAA believes that the 190-dB SEL threshold for sub-TTS behavioral disturbance is insufficiently conservative for free-ranging marine mammals exposed to tactical mid-frequency sonar and other high level acoustic sources. While we concur with the advantages arising from the use of behavioral observations in controlled laboratory conditions, there is considerable uncertainty regarding the validity of applying data collected from trained captives conditioned to not respond to noise exposure in setting thresholds for behavioral reactions of naive wild individuals to a sound source that apparently evokes strong reactions in some marine mammals. NOAA provides the following observations in support of

our conclusion that the proposed 190-dB SEL threshold is insufficiently conservative.

- Although wide-ranging in terms of sound sources, context, and type/extent or observations reported, the large and growing body of literature regarding behavioral reactions of wild, naive [*sic*] marine mammals to anthropogenic exposure *generally suggests* that wild animals are behaviorally affected at significantly lower levels than those determined for captive animals by Finneran and Schlundt (2004). For instance, cetaceans exposed to human noise sound sources, such as seismic airgun sounds and low frequency sonar signals, have been shown to exhibit avoidance behavior when the animals are exposed to noise levels of 140-160 dB re: 1μPa under certain conditions (Malme *et al.*, 1983; 1984; 1988; Ljungblad *et al.*, 1988; Tyack and Clark, 1998). Richardson *et al.* (1995) reviewed the behavioral response data for many marine mammals species and a wide range of human sound sources.

- Two specific situations for which exposure conditions and behavioral reactions of free-ranging marine mammals exposed to sounds very similar to those proposed for use in USWTR are considered by Nowacek *et al.* (2004) and NMFS (2005). Both strongly suggest that profound behavioral alterations, including the alteration of feeding, diving and social behavior, at levels well below the 190-dB SEL criterion (acknowledging differences in metrics).

- Nowacek *et al.* (2004) conducted controlled exposure experiments on North Atlantic right whales using ship noise, social sounds of conspecifics, and an altering stimulus (frequency modulated tonal signals between 500 Hz and 4.5 kHz. Animals were tagged with acoustic sensors (D-tags) that simultaneously measured movement in three dimensions. Whales reacted strongly to alert signals at received levels of 133-148 dB SPL, mildly to conspecific signals, and not at all to ship sounds or actual vessels. The alert stimulus caused whales to immediately cease foraging behavior and swim rapidly to the surface. Although SEL values were not directly reported, based on received exposure durations, approximate received values were on the order of 160 dB re: $1\mu Pa^2$-s.

- NMFS (2005) evaluated the acoustic exposures and coincident behavioral reactions of killer whales in the presence of tactical mid-frequency sonar. In this case, none of the animals were directly fitted with acoustic dosimeters. However, based on an analysis by the Naval Research Lab that took advantage of the fact that calibrated measurements of the sonar signals were made *in situ* and using advanced modeling to bound likely received exposures, estimates of received sonar signals by the killer whales were possible. Received SPL values ranged from 121 to 175 dB re: $1\mu Pa$, with the vast majority (all those other than during the closest approach at the end of

exposure) being below 160 db re: 1μPa. Two different summation procedures were used in calculating SEL values, one assuming a simple energy accumulation ("10 log N") and one presuming some recovery owing to exposure duty cycle ("5 log N"). The most probable SEL value for the 10 log N procedure was 187.4 dB dB re: 1μpa^2-s and worst-case estimate was 195.8 dB re: 1μpa^2-s. The most probable SEL value using the 5 log N procedure was 169.1 dB re: 1μPa^2-s and the worst-case estimate was 177.7 re: 1μPa^2-s. Researchers observing the animals during the course of sonar exposure reported profound alterations in swimming, breathing, and diving behavior. Some of these behavioral alterations occurred prior to the period of closest approach when the SEL exposure numbers were considerably below the most probable or worst-case estimates for the entire exposure event using either metric.

- Finally, we note the fact that the pure tone exposures in laboratory conditions differ physically in several substantive ways from received tactical sonar signals in real-world conditions. Although pure tone exposures used in the captive TTS studies are certainly more like tactical mid-frequency sonar than certain human sound sources (such as vessels or ice-breaking) involved in less-controlled behavioral studies of wild animals, there are some potentially significant differences between these laboratory noise exposures and the complex frequency modulation and multi-path

propagation patterns of tactical sonars in operational environments. These features may contribute to the perceptual similarity between tactical sonar signals and the social sounds of top-level predators, namely killer whales, increasing the potential for behavioral disturbance at lower received levels.

Given these considerations, NOAA believes that the Navy should develop a more conservative acoustic threshold for sub-TTS behavioral disturbance than the 190 dB SEL criterion. Acknowledging the quantitative limitations of many of the field observations of marine mammals and the advantages in this regard of the Finneran and Schlundt (2004) analysis, we suggest several alternative interpretations that may be more appropriate:

- Data collected from wild, naive marine mammals reacting to acoustic stimuli that are of sufficient data quality might be integrated into a behavioral analysis in conjunction with the captive data. Species-specific reactions of the multiple taxa that may be exposed to Navy mid-frequency tactical sonar may result in multiple exposure criteria.

- One possible explanation for the higher SPLs required for captive animals to show a behavioral reaction than some wild animals is that the captive individuals have become habituated to noise exposure. The temporal sequence of data underlying the Finneran and Schlundt (2004) analysis could be analyzed to determine if behavioral reactions changed as a function of exposure history.

This suggestion has been made previously by NOAA to Navy, but no information bearing on this point has been provided. While we appreciate the fact that the pattern of exposures and limited number of samples limit a detailed analysis in this regard, it would be useful to have at least some information, even qualitative, as to whether there is indication of habituation (or sensitization). While it may not provide quantitative guidance in terms of specific response numbers, it may well give some indication as to whether a more conservative interpretation of the captive data is warranted based on the limited information.

- Finally, and perhaps most justified given the very limited information, the behavioral SEL threshold could be established based on a more conservative interpretation of the Finneran and Schlundt (2004) analysis. They selected the exposure level coincident with captive animals exhibiting behavioral alterations in 50 percent of experiential sessions at 3, 10, and 20 kHz. An interpretation of the captive laboratory data that regard wild, naive animals as more likely to respond behaviorally at lower levels would be to calculate the SEL value at which captive animals exhibited behavioral alterations in some lower percentage of exposure sessions. We believe that adopting the 25 percent behavioral response thresholds is a reasonably conservative interpretation of the available information. Given the wide frequency band of active acoustic sources likely to be deployed over the years in USWTR (including many

sources other than tactical mid- frequency sonar), the most appropriate means of interpreting the captive behavioral data is to include data pooled for all individuals and all test frequencies (0.4, 3, 10, 20, and 75 kHz) in the TTS experiments.

Potential Mortality

In the Navy DEIS, the Navy proposes that the anticipated incidental take of beaked whales by Level B Harassment be considered Level A Harassment to take into account the known sensitivity of these species to tactical sonar. However, in the Navy DEIS the Navy does not consider the potential for mortality of beaked whales, or any other cetaceans, that may result from strandings directly related to operation of mid-frequency sonar. When the 2004 stranding of melon-headed whales during RIMPAC exercises in Hawaii is considered in addition to other possible military-related stranding events, NOAA believes that the Navy should seriously reconsider the potential for mortality of cetaceans due to strandings related to activities in USWTR. An analysis of that potential should be included in the Navy's FEIS.

North Atlantic Right Whale

Further analysis of right whale sightings in this area is needed to evaluate the potential impacts of the preferred alternative. The Navy should consider the potential for interacting with and impacting right whales in the operational area to ensure adequate protection of this highly endangered species.

Mitigation and Monitoring

The Navy is encouraged to consider additional mitigation and monitoring measures, such as pre- and post event surveys (including aerial surveys), and consideration of operational restrictions, especially during right whale migration periods in the spring and fall.

Thank you for considering NOAA's comments on this DOEIS/DEIS. We look forward to continued cooperation on this important project. Please direct any questions to Shelby Mendez by phone at 301-713-1622 x 207 or by email at Shelby.L.Mendez@noaa.gov.

Sincerely,

/s/ TODD C. STILES for
TODD C. STILES
Rodney F. Weiher, Ph.D.
NEPA Coordinator
NOAA Office of Program Planning and Integration

[Seal Omitted]

DEPUTY SECRETARY OF DEFENSE

1010 DEFENSE PENTAGON
WASHINGTON, DC 20301-1010

JUN 30 2006

MEMORANDUM FOR SECRETARY OF THE NAVY

SUBJECT: National Defense Exemption from Requirements of the Marine Mammal Protection Act for Certain DoD Mid-Frequency Active Sonar Activities

Pursuant to Title 16, Section 1371(f), of the United States Code, and having conferred with the Secretary of Commerce, I have determined that it is necessary for the national defense to exempt all military readiness activities that employ mid-frequency active sonar during major training exercises or within established Department of Defense maritime ranges or established operating areas from compliance with the requirements of the Marine Mammal Protection Act, Title 16, Sections 1361 - 1421h, of the United States Code. For purposes of this exemption, mid-frequency active sonar is defined as those active sonar systems operating within the frequency range of 1 to 10 kHz. A military readiness activity is defined in Section 315(f) of Public Law 107-314.

Specific actions falling within this category of actions are exempted for a period of six months from today's date while the Department of the Navy works with the Department of Commerce to address the regulatory authorization process and expedite the analysis and regulatory steps necessary to come into full compliance

with the requirements of the Marine Mammal Protection Act. For the conduct of RIMPAC 2006, the Navy shall comply with the mitigation measures set out in the attached Incidental Harassment Authorization for RIMPAC 2006 approved by the National Marine Fisheries Service on June 27, 2006. During this six month-period, all exempted military readiness activities employing mid-frequency active sonar other than those conducted as part of RIMPAC 2006 shall employ the attached "Mid-Frequency Active Sonar Mitigation Measures during Major Training Exercises or within Established Maritime Ranges or Established Operating Areas."

/s/ GORDON ENGLAND

Attachment:

1. Incidental Harassment Authorization for RIMPAC 2006
2. Mid-Frequency Active Sonar Mitigation Measures during Major Training Exercises or within Established Maritime Ranges or Established Operating Areas

Mid-Frequency Active Sonar Mitigation Measures during Major Training Exercises or within Established Ranges or Established Operating Areas

1. **Personnel Training**

   - Navy shipboard lookouts shall be qualified watchstanders who have completed marine species awareness training.
     - Navy watchstanders will participate in marine mammal observer training approved by NMFS.

2. **Operating Procedures**

   - **Bridge personnel on ships and submarines** – Ships and surfaced submarines shall have personnel on lookout with binoculars at all times when the vessel is moving through the water. Standard operating procedure requires these lookouts maintain surveillance of the area visible around their vessel and to report the sighting of any marine species, disturbance to the water's surface, or object (unknown or otherwise) to the Officer in Command.
     - Bridge lookout personnel shall have completed marine species awareness training as updated in 2005.
     - At least one individual who has received this training will be present, and on watch, at all times during operation of tactical mid-frequency sonar, on each vessel operating mid-frequency sonar.

- **Aviation units** – Aircraft participating in ASW events will conduct and maintain, whenever possible, surveillance for marine species prior to and during the event. The ability to effectively perform visual searches by participating aircraft crew will be heavily dependent upon the primary duties assigned as well as weather, visibility, and sea conditions. Sightings would be immediately reported to ships in the vicinity of the event as appropriate.

- **Sonar personnel on ships, submarines, and ASW aircraft** –

  - **Ship and** submarine sonar operators will check for passive indications of close-aboard marine mammals prior to their commencement of ASW operations involving active mid-frequency sonar.

  - **Sonar levels (generally)** – The Navy will operate sonar at the lowest practicable level, not to exceed 235 dB, except for occasional short periods of time to meet tactical training objectives. Use of MFA sonar at source levels above 235 dB will be logged and reported in accordance with section 3.

  - **Sonar controls (generally)** – With the exception of choke-point exercises (special measures outlined below), the Navy will not

    i. Operate mid-frequency active sonar within 25 km of the 200-m isobath during RIMPAC 2006,

ii. In major fleer exercises, operate mid-frequency active sonar within 12 nm of a coast, except for RIMPAC 2006 (which is covered above) and military readiness activities at the established ranges at San Clemente Island and PMRF.

iii. Conduct sonar activities in constricted channels.

- **Safety zones** – When marine mammals are detected close aboard, all ships, submarines, and aircraft engaged in ASW would reduce mid-frequency active sonar power levels in accordance with the following specific actions:

  – **Helicopters** – Helicopters shall observe/survey the vicinity of an event location for 10 minutes before deploying active (dipping) sonar in the water. Helicopters shall not dip their sonar within 200 yards of a marine mammal and shall secure pinging if a marine mammal closes within 200 yards after pinging has begun.

  – **Ships and submarines**

    i. **≤ 1,000 m** – When marine mammals are detected by any means (aircraft, lookout, or aurally) within 1000 m of the sonar dome (the bow), the ship or submarine will limit active transmission levels to at least 6 dB below the equipment's normal operating level for sector search modes. Ships and submarines would continue to limit maximum ping levels by this 6-dB factor

until the animal has been seen to leave the area, has not been seen for 30 minutes, or the vessel has transited more than 2000 m beyond the location of the sighting.

ii. ≤ 500 m – Should the marine mammal be detected within or closing to inside 500 m of the sonar dome, active sonar transmissions will be limited to at least 10 dB below the equipment's normal operating level for sector search modes. Ships and submarines would continue to limit maximum ping levels by this 10-dB factor until the animal has been seen to leave the area, has not been seen for 30 minutes, or the vessel has transited more than 1500 m beyond the location of the sighting.

iii. ≤ 200 m – Should the marine mammal be detected within or closing to inside 200 m of the sonar dome, active sonar transmissions will cease. When a marine mammal or sea turtle is detected closing to inside approximately 200 m of the sonar dome, the principal risk becomes potential physical injury from collision. Accordingly, ships and submarines shall maneuver to avoid collision if the marine species closes within 200 m to the extent possible, with safety of the vessel being paramount. Sonar will not resume until the animal has been seen to leave the area, has not been seen for 30 minutes, or the vessel has transited more than 1200 m beyond the location of the sighting.

iv. **Significant surface ducting conditions** – In significant surface ducting conditions, the Navy will enlarge the safety zones such that a 6-dB power-down will occur if a marine mammal enters the zone within a 2000 m radius around the source, a 10-dB power-down will occur if an animal enters the 1000 m zone, and shut down will occur when an animal closes within 500 m of the sound source.

v. **Low visibility conditions (i.e., whenever the entire safety zone cannot be effectively monitored due to nighttime, high sea state, or other factors)** – The Navy will use additional detection measures, such as infrared (IR) or enhanced passive acoustic detection. If detection of marine mammals is not possible out to the prescribed safety zone, the Navy will power down sonar as if marine mammals were present in the zones they cannot see (for example, at night, if night goggles allow detection out to 1000 m, power-down would not be necessary under normal conditions; however, in significant surface ducting conditions, the Navy would need to power down 6 dB, as they could not effectively detect mammals out to 2000 m, the prescribed safety zone).

- **Choke-point exercises**

  – Prior to approving a proposed choke-point exercise, Navy commands shall consult with OPNAV N45.

- The Navy will provide NMFS (Stranding Coordinator and Protected Resources, Headquarters) with information regarding the time and place for the choke-point exercises in advance of any proposed choke-point exercise.

  i. The Navy and NMFS will mutually agree upon whether non-Navy observers are required.

- The Navy will have at least one dedicated Navy observer that has received the training mentioned above, on board each ship and conducting observations during the operation of mid-frequency tactical sonar during the choke-point exercises.

- The Navy will coordinate a focused monitoring effort around the choke-point exercises, to include pre-exercise monitoring (2 hours), during-exercise monitoring, and post-exercise monitoring (1-2 days). This monitoring effort will include at least one dedicated aircraft or one dedicated vessel for realtime monitoring from the pre-through post-monitoring time period, except at night, with the vessel or airplane maintaining regular communication with a Tactical Officer with the authority to shut-down, power-down, or delay the start-up of sonar operations. These monitors will communicate with the Navy command to ensure the safety zones are clear prior to sonar start-up, to recommend power-down and shut-down during the exercise, and to extensively search for potentially injured or stranding animals in

the area and down-current of the area post-exercise.

3. **Stranding Response and Reporting**

- The Navy will coordinate with the NMFS Stranding Coordinator for any unusual marine mammal behavior, including stranding, beached live or dead cetacean(s), floating marine mammals, or out-of-habitat/milling live cetaceans that may occur at any time during or shortly after major exercises.
- The Navy will provide a report to NMFS after the completion of a major exercise that includes:
  - An assessment of the effectiveness of these mitigation and monitoring measures with recommendations of how to improve them.
  - Results of the marine species monitoring during the major exercise. As much unclassified information as the Navy can provide including, but not limited to, where and when sonar was used (including sources not considered in take estimates, such as submarine and aircraft sonars) in relation to any measured received levels, source levels, numbers of sources, and frequencies, so it can be coordinated with observed cetacean behaviors. If necessary, classified information may be provided to NMFS personnel with an appropriate security clearance and need to know.

4. **NOTHING IN THE FOREGOING MEASURES SHALL RESTRICT THE AUTHORITY OF A COMMANDING OFFICER TO TAKE SUCH STEPS AS MAY BE NECESSARY TO AVOID HAZARDING HIS VESSEL.**

John Mayer

From: John Mayer [john.mayer@marineacoustics.com]
Sent: Thursday, March 21, 2002 9:11 AM
To: Joseph Johnson; Joe Johnson
Cc: Clay Spikes
Subject: FW: 1999 USVI Standings

Importance: High

Joe,

This is the 1999 USVI stranding that Ken is concerned about. MMIC24a is on pages 60-63 of the Annotated Copy. The part about USVI stranding is on pages 62-63. I recommend that we agree to leave in the deleted sentence, "The Navy. . . . . .in the Caribbean," and have Ken add at the end, "However, SURTASS LFA had no involvement in this event."

New Subj: Did you invite Barry to the meeting on Friday? Also I should tell Ken, however, I don't see a need for him to be there.

V/R
John

——Original Message——
From: Ken Hollingshead [mail to: Ken.Hollingshead@noaa.gov]
Sent: Tuesday, March 19, 2002 7:15 AM
To: John Mayer
Cc: Clay Spikes; Roger Gentry; Barry Stamey; Donna Wieting; Mi Ae Kim

Subject: 1999 USVI Strandings
Importance: High

John,

In regard to the Navy's request to remove the sentence about "deny or confirm" the Oct 1999 beaked whale stranding (RTCMMIC24a), I have added in your language that SURTASS LFA sonar had no involvement, but have not removed the suggested sentence regarding the lack of a report by the Navy.

Here is the background on the 1999 beaked whale stranding (Not to be confused with the beaked whale stranding in Vieques in May 2000 or the "mysterious" Jan. 1998 beaked whale stranding at Vieques one day prior to beginning Inner Range activities (but not necessarily Outer Range activities)). This is from the NMFS consultation history for Vieques.

On October 3, 1999, 4 beaked whale stranded in the USVI. On Oct. 7, 1999, the environmental counsel for the Navy's Southeast Region verbally notified NMFS of four beaked whale strandings in the vicinity of the Inner Range, and acknowledged naval vessel activity in the area at the time, but would not comment on (and subsequently failed to provide requested information) on naval sonar activities at the times and locations of the strandings. Also, on October 7, 1999, the Navy withdrew its request for Vieques consultation under the ESA.

By letter to the Navy dated October 15, 1999 in response to the four beaked whale strandings on nearby shores during Navy maneuvers off Vieques, and after receiving a reliable report of loud naval sonar noise underwater associated with nearby naval maneuvers (from a USVI

gov't official), NMFS requested that the Navy reinitiate section 7 consultation on all its ongoing AFWTF activities. Also, USVI press reports quoted divers in the area as seeing naval ships and hearing loud sonar activity. Despite several requests by NMFS for additional information, the Navy has neither confirmed nor denied sonar use which may have caused the four whales to strand in the Caribbean.

Also you can see, my statement in the final rule is pretty bland considering the more complete story stated above. Please let me know if this is remains an issue for the Navy (which could delay the rule's publication).

Ken

[FAX TRANSMISSION DATED MARCH 6, 2003]

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, FL 33702
(727) 570-5312, FAX 570-5517

F/SER3-EGH

RADM J. Kevin Moran, USN
Commander, Navy Region Southeast
Box 102, Naval Air Station
Jacksonville, FL 32212-0102

RE: U.S. Navy consultations with the National Marine Fisheries Service, pursuant to Section 7 of the Endangered Species Act

Dear Admiral Moran:

I have your letter of October 7, 1999, withdrawing the Navy's request for informal consultations relative to the September-October 1999 COMPTUEX exercise. Thank you for keeping the National Marine Fisheries Service (NMFS) apprised of the Navy's intentions.

On October 7, 1999, LCDR Lindy Young of your staff advised NMFS of the Navy's exercise and naval ship sonar tests off the Atlantic Fleet Weapons Training Facility (AFWTF), Vieques, Puerto Rico which apparently coincided with a number of marine mammal strandings in the vicinity. Specifically, four goosebeaked whales stranded on Sunday, October 3, 1999: two in St. Thomas, one in St. John, and one in St. Croix. As a matter of

clarification, naval sonar exercises were never revealed to NMFS and were *neither considered nor authorized* under the terms of the 1981 Biological Opinion issued by NMFS for continued operation of AFWTF.

We appreciate the Navy's offer to fly in specialists to help ascertain the exact cause of the marine mammal strandings, and to help determine if the Navy's recent sonar training activities are responsible for the cetacean strandings, as well as to help devise procedures to prevent these occurrences in the future. Since necropsies have already been conducted, and to our knowledge additional animals have not stranded, we urge the Navy to contract with Dr. Darlene Ketton of Harvard University's Department of Otolaryngology to conduct an investigation, and offer her whatever assistance she may require in processing the ear samples from these whales. Dr. Ketton may be contacted by phone at (617) 573-4083 or by Email at drk@warren.med.harvard.edu.

In our July 1, 1999 letter to CAPT James Stark, Commanding Officer of Roosevelt Roads Naval Station, Ceiba, Puerto Rico, we stressed the need for the Navy to reinitiate formal consultation on Navy operations at AFWTF, pursuant to Section 7 of the Endangered Species Act (ESA), for all Navy operations that might affect marine species, nothing that there are mechanisms that authorize the take of sea turtles incidental to Federal activities through formal consultation, *and of marine mammals through application for incidental take authorization* pursuant to Section 101(a) of the Marine Mammal Protection Act (MMPA).

NMFS again emphasizes that incidental take of endangered or threatened species, without an Incidental Take Statement issued as part of a Biological Opinion, violates the ESA. Take of marine mammals, without a permit pursuant Section 101(a) of the MMPA, is similarly prohibited.

The ESA requires the Navy to initiate formal consultation for all activities that might affect listed marine species. It is the Navy's benefit to do so because an Incidental Take Statement will likely be issued authorizing a set level of mortality to endangered or threatened species. NMFS strongly recommends that the Navy also procure the necessary NMFS permits that will authorize incidental take of marine mammals by the Navy during naval activities at AFWTF.

We look forward to working closely with the Navy in developing a current Biological Opinion on Navy activities at the Vieques range, and in its application for an incidental take permit pursuant to the MMPA. If you have any questions, please call Eric Hawk or Dr. Kathy Wang at (727) 570-5312.

Sincerely,

[NO SIGNATURE]

William T. Hogarth, Ph.D.
Regional Administrator

cc: GCSE – St. Petersburg – E. Joy
FWS – Boquerón, PR – J. Oland
PRDNER – San Juan, PR – D. Pagán Rosa
USN – Roosevelt Roads, PR – J. Stark

Resident Commissioner of PR, Washington, DC – C. Romero Barceló
Harvard University Dept of Otalacymgology – D. Ketton

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Supreme Court, U.S.
FILED
AUG 7 - 2008
OFFICE OF THE CLERK

No. 07-1239

In the Supreme Court of the United States

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., PETITIONERS

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

JOINT APPENDIX (VOLUME 2)

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PETITION FOR A WRIT OF CERTIORARI FILED: MAR. 31, 2008
CERTIORARI GRANTED: JUNE 23, 2008

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UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL. DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF JIM AGRONICK IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF JIM AGRONICK

I, JIM AGRONICK, declare as follows:

1. I reside in Irvine, California. I have personal knowledge of the matters set forth herein.

2. I have been a member of Cetacean Society International ("CSI") for many years. I joined and continue to support CSI because of my love for the oceans and for marine mammals, which I have felt ever since I was a child.

3. I am the Chief Operating Officer for a physicians' network in Newport Beach, and I hold a Masters Degree in public health from the University of California at Los Angeles.

4. One of the reasons I enjoy living in southern California is because I am close to the ocean. I am an avid scuba diver and an amateur marine wildlife photographer. The aquatic environment has always been fascinating to me, and spending time on the water and observing marine wildlife are essential to my quality of life. I have dived off both coasts of the U.S. and extensively internationally. As a scuba diver, I have a deep interest in the health of the oceans and marine life. I think it is critically important that the oceans and the creatures that inhabit them be protected as valuable resources.

5. I have been diving in southern California for about fifteen years. I generally dive in the Channel Islands or elsewhere off the coast of southern California about two to three times a month. Most often, I dive off Catalina Island or off one of several oil rigs situated offshore from Long Beach (including the Eureka rig and the Ellen and Ellie double rig). When diving in waters near Catalina Island, I have used several spots around the island, including around Bird Rock, Ship Rock, Emerald Rock, and Whale Rock, which is on the western side of the island. I also dive at Farnsworth Bank, which is about 2 miles off the southwestern side of Catalina Island. I have also dived off of Anacapa Island, Santa Cruz Island, Santa Barbara Island, and San Clemente Island. Each of these spots offers a unique diving experience.

6. One aspect of diving that I find particularly fulfilling is the opportunity to observe and interact with marine species. While diving in these areas I typically observe a variety of fish species, including rock fish, kelp fish, moray eel, and giant black sea bass, as well as many sea lions and seals. I have also occasionally seen sharks. On my boat trips out to diving spots, which generally take me out from San Pedro or Long Beach Harbor directly to the dive location, I typically see up to hundreds of dolphins. Seeing marine life, including fish and marine mammals, greatly enhances my enjoyment of the ocean.

7. One of the ways I interact with and appreciate marine life is through photography. I am an amateur marine life photographer and I regularly photograph fish and other marine life while diving. I have also photographed whales and other marine mammals in and around the Channel Islands, mostly from whale-watching boats. I have sold some of my marine life photography at charity auctions and have also given my photos to friends as gifts.

8. Diving is a staple in my life, and I intend to continue diving in and around the Channel Islands in the future, including trips off Catalina Island, Farnsworth Bank, Anacapa Island, Santa Cruz Island, Santa Barbara Island, and San Clemente Island. Among the many diving trips I expect to take over the next two years, I intend to take at least one diving trip off San Clemente Island, well within about a mile of the island. I also plan to continue to regularly look for and photograph marine wildlife in these areas in the future.

9. I used to take whale-watching boat trips out to the Channel Islands regularly, as much as six to seven

times a season. In recent years, however, it is my impression that whales are harder to spot from boats leaving out of Long Beach and other harbors in southern California. I have therefore not done as much whale-watching recently, though I would begin to take whale-watching trips again if the trips were more successful in spotting whales.

10. From my long-time experiences diving in California and all over the world, I have developed a strong sense of connection to the ocean and a deep appreciation for fish, marine mammals and other marine species. I greatly enjoy the opportunities I have to view and interact with them, and, as a result, I am deeply concerned about the effects of active sonar systems on marine mammals and other marine species. I am aware of and very concerned by scientific evidence indicating that the use of active sonar may pose a serious threat to marine mammals, fish, and other marine species.

11. As I understand it, the U.S. Navy is planning two years' worth of major training exercises using mid-frequency active sonar systems in and near waters where I dive, boat, and photograph, and in and near waters that provide habitat for the species of fish and marine mammals that I observe and enjoy. My enjoyment of the marine environment is harmed by the failure of the Navy to follow the mandatory procedures established by the National Environmental Policy Act, the Endangered Species Act, and the Coastal Zone Management Act in undertaking these exercises, because the Navy's failure to comply with federal environmental law in its training with sonar makes it more likely that harm will come to the marine life that I enjoy in this area. Harm to dolphins, whales, seals, sea lions, fish, and other marine life

in these areas from Navy sonar lessens the satisfaction I feel while boating and diving and reduces my chances of observing these magnificent species. It therefore harms my recreational, personal and aesthetic interests.

12. I believe that the Navy's challenged exercises in Southern California waters have harmed and will continue to harm the marine species in the areas where it conducts active sonar testing, and that my own enjoyment and engagement with marine mammals and other marine life has been impaired and will continue to be impaired by the Navy's failure to properly consider and mitigate the harm to marine life caused by its exercises.

Executed on June 11th, 2007, at Newport Beach, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ JAMES P. AGRONICK
JAMES P. AGRONICK

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL. DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF ULRIKE BURGIN IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF ULRIKE BURGIN

I, Ulrike Burgin, declare as follows:

1. I reside in La Jolla, California. I have personal knowledge of the matters set forth herein.

2. I have been a member of the Natural Resources Defense Council ("NRDC") since 1996. I joined and continue to support NRDC because of my general interest in strong protection of the environment through litiga-

tion and legislation, and because I believe the organization is effective in protecting whales.

3. I have a deep interest in marine wildlife, and have a Ph.D. in zoology. As a scientist I have studied the species of nudibranchs (sea slugs) that are found in the coastal ecosystem near La Jolla. I moved to La Jolla in 1962, and consider proximity to the marine ecosystem one of the most rewarding aspects of living in this area.

4. Visiting the beach to swim, tidepool, and bird watch are staple activities in my daily life. I normally walk on the beach once or twice a week, and greatly enjoy beach-walking as an opportunity to observe shorebirds, seabirds, and other marine species. The species I typically observe include pelicans, cormorants, sanderlings, sandpipers, black-bellied plover, terns, turnstones, whimbrels and willets. I regularly see the seals at the Children's Pool in La Jolla, and occasionally see sea lions as well. In the past, I observed whale spouts from shore relatively frequently, but find that I no longer see whale spouts as often. In the past, I also swam in the ocean frequently each summer. This past summer, due to circumstances, I only went about five times. I have participated in the La Jolla Rough Water Swim, a one-mile swim in La Jolla cove, a total of 4 times in the past, most recently in 2004 when I turned 70.

5. I am also a regular docent on whale-watching trips off the San Diego coast. In 1990 I began volunteering as a nature guide with the San Diego Natural History Museum, giving guided inland nature hikes for school children in the San Diego area. In 2005, the museum began the Hornblower whale-watching program, and I became trained as a docent for these outings. The Hornblower whale-watching season is coordinated with

the gray whales' seasonal migration along the San Diego coast. From mid-December to the end of March, I go on approximately one all-day whale-watching outing per week. There are two cruises per day, and each one lasts three and a half hours, originates at the Broadway Pier in San Diego, and cruises past Point Loma. In the first half of the season, the gray whales travel south and swim relatively close to shore, so the boat stays within approximately three nautical miles of shore. In the second half of the season, from mid-January until the end of March, the gray whales travel north and swim along the continental shelf, so the boat cruises up to approximately 9-11 nautical miles offshore to see them. As part of my duties as a docent, I educate passengers about the gray whales' migration, behavior, and biology. Out of 20 whale-watching outings on the Hornblower last season, I saw gray whales during at least 18 of the outings. The opportunity to observe whales on a regular basis is one that I greatly value. Besides my own enjoyment, I find it extremely rewarding to share my knowledge of marine mammals with visitors from all over the U.S. and from abroad, especially since many of them have never seen whales before. The boat captain observes guidelines that prohibit approaching the whales closer than 100 yards, but even at that distance it is always thrilling to see these magnificent creatures. I also observe other marine mammals during these outings, including sea lions and different kinds of dolphins, and other docents and the captains have seen fin whales and blue whales

6. In addition to the opportunities to see whales on the Hornblower, I have also enjoyed other close interactions with whales. One of the most memorable and deeply moving experiences I had was visiting Laguna San Ignacio, Mexico, in 1996 during the whale calving

season. I went out in a small boat and was close enough to the whales that I could touch them. Being so close to these majestic animals was thrilling, and strengthened my sense of connection to marine mammals and other marine species.

7. Observing the ocean and the marine mammals, seabirds, and other marine species that inhabit it is extremely fulfilling, and I plan to continue my docent activities with the Hornblower whale-watching boat outings as long as I am able. This year's whale-watching season begins in December, and I intend to participate in at least one outing per week. I also plan to continue to walk the beach in La Jolla.

8. Participating as a docent on whale-watching outings and having the opportunity to observe and interact with whales have increased my concern for the well-being of whales and other marine mammals. Since my docent training in 2005, I have endeavored to learn as much as possible about the effects of sonar on marine mammals. Working as a volunteer for the Marine Mammal Conference in San Diego in December 2005, I had a chance to attend many of the scientific presentations. In addition, I attend other lectures and field trips, often check out books and articles from the Scripps library, and recently attended the American Cetacean Society conference in order to learn more about marine mammals. From these various sources and news reports, I am aware of the apparent connection between the use of military sonar and mass strandings of marine mammals. I am aware of and very concerned by scientific evidence indicating that the use of active sonar may pose a serious threat to marine mammals by causing physical in-

jury or disrupting their basic life functions such as hearing, navigation, and communication.

9. As I understand it, the U.S. Navy plans to conduct 14 major training exercises over the next two years using mid-frequency active sonar systems in and near the waters where I volunteer on whale-watching outings off the coast of San Diego near Point Loma, and in waters that provide habitat for the species of whales, dolphins, and other marine species I observe and enjoy there. My enjoyment of the marine environment is harmed by the failure of the Navy to follow the mandatory procedures established by the National Environmental Policy Act, the Endangered Species Act, and the Coastal Zone Management Act in undertaking these exercises, because the Navy's failure to comply with federal environmental law in its training with sonar makes it more likely that harm will come to the marine life that I enjoy in these areas. Any harm to marine mammals, other marine species, or the marine ecosystems generally from Navy sonar lessens the chances that I will be able to observe the magnificent marine species I have enjoyed watching for years, and harms my recreational, personal and aesthetic interests.

10. I believe that the Navy's challenged exercises have harmed and will continue to harm the marine species in the areas where it conducts active sonar testing, and that my own enjoyment and engagement with marine mammals and other marine life has been impaired and will continue to be impaired by the Navy's failure to properly consider the harm to marine life caused by its exercises.

Executed on June 6, 2007, at 10:30am LaJolla, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ ULRIKE F. BURGIN
ULRIKE F. BURGIN

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL. DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF JEAN-MICHEL COUSTEAU IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF JEAN-MICHEL COUSTEAU

I, JEAN-MICHEL COUSTEAU, declare as follows:

1. I have personal knowledge of the matters set forth herein.

2. I reside in Santa Barbara, California, with the intention to remain.

3. I am President of Ocean Futures Society, a non-profit corporation, located at 325 Chapala Street, Santa Barbara, California 93101. Ocean Futures Society was

formed in March 1999. Prior to that time, the organization was known as the Jean-Michel Cousteau Institute. I also helped found The Cousteau Society, with my father, Jacques Cousteau, in 1973.

4. The mission of Ocean Futures Society is to explore our global ocean, inspiring and educating people throughout the world to act responsibly for its protection, documenting the critical connection between humanity and nature, and celebrating the ocean's vital importance to the survival of all life on our planet. Ocean Futures Society is an Internet-based membership organization. Our total membership is approximately 24,000 adults and children from around the world.

5. For more than four decades I have used my vast experiences to communicate to people of all nations and generations my love and concern for our water planet. I achieve this through my roles as an explorer, environmentalist, educator, and film producer.

6. Since first being 'thrown overboard' by my father, Jacques Cousteau, at the age of seven with newly invented SCUBA gear on my back, I have been exploring the ocean realm. I spent much of my life with my family exploring the world's oceans aboard *Calypso* and *Alcyone*. After my mother's death in 1990 and my father's in 1997, I founded Ocean Futures Society in 1999 to carry on this pioneering work.

7. I have over 60 years of diving experience. I have a degree in architecture, specializing in marine structural design. I have over 30 years of experience managing non-profit marine organizations. I am an author of books on marine life.

8. I have been SCUBA diving since childhood all over the world. I have led research and film expeditions in virtually every ocean on Earth, and I regularly lecture about marine life at colleges, universities, museums and at sea on cruise ships. I have testified as an expert before the United Nations (UN World Summit, Johannesburg, 2002), United States Congress (Summer, 2002, Washington, DC), and the U.S. Oceans Commission (Spring, 2002, Long Beach, CA).

9. I have encountered approximately half of all marine mammal species, including all the major baleen and toothed whales, sharks (white, blue, reef, basking, whale, nurse, tiger, bull), pinnipeds (including fur seals, elephant seals, monk seals, and sea lions), otters, Western Pacific coral and other invertebrates, tropical Pacific reef and pelagic fish, flora and fauna found in tropical/temperate, coastal/pelagic, near-shore and deep-water ecosystems.

10. My way of life, both professionally and personally, is based on the sea and its inhabitants. As part of my role as the president of Ocean Futures, I travel to meet with world leaders as an environmental diplomat and to lecture on the health of our oceans. This work takes me to virtually every corner of the Earth, where I can see first-hand the status of marine ecosystems, their inhabitants, and human life that is dependent on these systems for well-being.

11. Of particular interest to me is the natural history of marine mammals, especially those found in the Pacific Ocean. Whales and dolphins are top consumers in marine systems and preserve a balance in both prey species and overall ecosystem functions. I find these creatures intelligent and highly evolved, with complex sensory

systems. They are dependent on their well-tuned echolocation systems for foraging and communication. One of the aspects about whales and dolphins that fascinates me and makes them ideal film subjects is their ability to migrate thousands of miles to different parts of the ocean. They travel the waters of our "blue planet" without having to cross borders as we humans do on land. They are not restricted by nationality; they are "global citizens" that do not require a passport to travel in their search for food, mates, safe places to rest, give birth, and raise their young.

12. As an explorer, diver, filmmaker, educator, and author, I am well aware of the possible impacts of active sonar on marine life, particularly cetaceans that depend on sound for navigation, communication and finding food for survival. I have documented my concern for the health of these populations and for the well-being of humans that may be exposed to mid-frequency active sonar during training by the Navy. Over the years, I have researched the subject of active sonar and have consulted with scientific experts. I have made my concerns known to the public since the mid 1990's in various newspaper and journal articles, as well as television and radio interviews.

13. On January 6, 2007, the *Los Angeles Times* published an editorial co-authored by me, urging the Navy to take significant steps to protect whales and other marine life in the sonar exercises challenged in this case, and encouraging the California Coastal Commission to require such steps from the Navy.

14. As a long-time resident of Santa Barbara, I regularly dive, work, and recreate in the waters off the coast of Southern California, particularly around the Channel

Islands. I regularly enjoy seeing whales, dolphins, and fish in these waters. I intend to continue to dive, work, and recreate in and around the Channel Islands regularly. In particular, over the next two years I expect to continue to dive, work, and recreate in and around Santa Catalina Island, Santa Cruz Island, Santa Rosa Island, San Nicholas Island, San Clemente Island, the Channel Islands National Marine Sanctuary, and the waters around and between each of these and the southern California shoreline.

15. I have a special interest in the gray whales that migrate twice each year along the shoreline of Southern California. In 2006, PBS aired an episode of my television show, "Jean-Michel Cousteau Ocean Adventures," in which I travel with the gray whales during their migration along the west coast of North America from the Bering Sea to Mexico, past Southern California. The episode highlights the many obstacles and threats they face along their path, including ocean noise pollution. I observe the gray whale migration each year, and I expect to observe the gray whales migrating along Southern California in late 2007 and again in the spring of 2008.

16. I understand that the Navy has authorized and is planning to conduct fourteen major sonar training exercises in its Southern California offshore training ranges, including in and around the waters where I regularly dive, work, recreate, and observe marine life. When the Navy conducts mid-frequency sonar training activities in its Southern California training ranges without complying with federal environmental statutes, it endangers the marine life in and around these waters

and harms my recreational, aesthetic, and professional interests.

17. I am very concerned that the Navy's training with mid-frequency active sonar in waters off Southern California is jeopardizing the health of marine species in this area. Because all life on Earth is connected, I am concerned that the widespread use of active sonar will affect the quality of human life, which is dependent on healthy marine communities, now and for generations to come.

18. I am also concerned that harm may come to human divers during future active sonar exercises. According to the Navy's own studies, exposure to intense sonar sound has caused significant trauma to human diver test subjects. When the Navy fails to comply with environmental statutes in its conduct of the mid-frequency active sonar exercises challenged in this case, it makes it more likely that I and my diving teams will be harmed by the Navy's use of sonar.

19. I strongly object to the Navy's failure to obey the mandatory procedures governing the protection of marine life and endangered species set forth in National Environmental Policy Act, the Coastal Zone Management Act, and the Endangered Species Act in its conduct of the training exercises challenged in this case. These laws are designed to protect marine life. I do not believe the Navy is above the laws by which the citizens of the United States abide. The Navy's failure to obey these laws makes it more likely that the marine environment and marine wildlife in the places where I dive and study wildlife has been harmed and will be harmed by Navy mid-frequency sonar use.

20. I believe we need to consider the ethical implications of continuing to expand this technology in light of the fact that dead and dying whales have been found coincident with tests and exercises employing mid-frequency military sonar. And, we need to question the Navy's reasoning for using this technology when the welfare of endangered marine mammals, whose very lives, ironically, depend on their own highly evolved sonar system, is at stake.

21. I think anyone who spends time in the sea, swimming, snorkeling or diving, will agree with me that the sea is filled with fascinating natural sounds. They can be as familiar as one's own breathing, strange, as in the case of the crunching noise produced by tropical parrotfish dining on the algae associated with coral, or wild and exotic, as are the squeals and clicks from dolphins using echolocation to hunt for fish. These are natural sounds that belong in the undersea world. But we must stop the essentially unrestricted use of harmful human-generated sound waves from high-power sonars until their effects are better understood. We must act quickly for the sake of marine creatures that enrich the oceans and, in turn, enrich our lives.

Executed on June 4, 2007, at Santa Barbara, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ JEAN-MICHEL COUSTEAU
JEAN-MICHEL COUSTEAU

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF STEPHEN CUMMINGS IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF STEPHEN CUMMINGS

I, STEPHEN CUMMINGS, declare as follows:

1. I reside in San Diego, California. I have personal knowledge of the matters set forth herein.

2. I have been a member of the Natural Resources Defense Council ("NRDC") since 1989. I joined and continue to support NRDC because of my general interest in environmental protection.

3. I moved to southern California 27 years ago in order to be close to the ocean. Surfing and watching the

ocean are essential to my quality of life. I have surfed on both coasts of the U.S., as well as internationally, and am a long-time member of the Surfrider Foundation. As a surfer, I have a deep interest in the health of the oceans and marine life. I consider the ocean a sanctuary for people like me who seek to escape the stress of daily activities. As a result, I think it is critically important that the oceans and the creatures that inhabit them be protected as valuable resources.

4. Since moving to San Diego in 1979, I have surfed at the beaches in this area three to five times a week when I am in town. I generally surf at Sunset Cliffs, Ocean Beach, and La Jolla. Six to ten times a year I use the Shelter Island boat ramp to surf by boat approximately three hundred yards off the coast near the Point Loma Lighthouse. I also surf at Imperial Beach approximately four to six times each summer, depending on the ocean currents. One aspect of surfing that I find particularly fulfilling is the opportunity to observe and interact with marine species. I typically observe a variety of fish species in this area, including garabaldis (California's state marine fish), grunion, calico bass, and schools of mackerels, as well as leopard sharks, seals, dolphins, and sea birds such as brown pelicans and terns. Occasionally I also see whales. One of the most special aspects of surfing in this area is frequently seeing dolphins running through the waves around me. It is exhilarating to be literally surfing with dolphins.

5. I own a property in Gaviota, Santa Barbara County, and spend approximately one month each year there. When I visit Gaviota, I usually surf every day. I generally surf between Gaviota and Point Conception. I normally see similar species there as in the San Diego

area, as well as sea otters, herons, and egrets. I find that the Point Conception area is a particularly good place to observe marine life in the spring due to upwelling ocean currents. I had a thrilling experience in that area one spring when a whale breached within 20 yards of me. Seeing the whale that close and so unexpectedly was at once awesome and terrifying, since it was such a huge creature.

6. Both in San Diego around Point Loma and in Santa Barbara County around Point Conception, I have occasionally seen whales from shore, especially gray whales as they migrate along the California coast. Seeing whales is always a special experience for me.

7. I also enjoy fishing, swimming, and kayaking as ways to observe and interact with the marine environment in San Diego and Santa Barbara. I kayak off the coast by La Jolla, Mission Bay, and the San Diego Bay, going as much as approximately one half mile to one mile offshore. When I kayak I frequently see fish and marine mammals, including dolphins and sea lions. I typically fish, swim, and kayak on a monthly basis, and often bring my daughter along with me to build her awareness of the ocean. She and I also participate in beach cleanups approximately twice a year in both San Diego and Santa Barbara. I find it especially fulfilling to share my passion for the marine environment with her and to teach her about the importance of protecting the oceans and marine species.

8. Surfing is a staple in my daily life. I intend to continue surfing in the San Diego and Santa Barbara areas as long as I am able, and look forward to continuing to share experiences in the marine environment with my daughter. I plan to continue to regularly visit

beaches, kayak, look for marine wildlife, and surf in the areas described above in the future.

9. From my long-time experiences surfing in California and all over the world, I have developed a strong sense of connection to the ocean and a deep appreciation for fish, marine mammals and other marine species. I greatly enjoy the opportunities I have to view and interact with them, and, as a result, I am deeply concerned about the effects of active sonar systems on marine mammals and other marine species. I am aware of and very concerned by scientific evidence indicating that the use of active sonar may pose a serious threat to marine mammals, fish, and other marine species by causing physical injury, stress, or disrupting their basic life functions such as communication. I am particularly concerned that this specific harm is occurring at a critical time when whales were beginning to recover from other threats to their survival, and that their comeback may be jeopardized by the use of sonar.

10. As I understand it, the U.S. Navy is planning two years' worth of major training exercises using mid-frequency active sonar systems in and near waters where I surf, fish, kayak, and swim, and in waters that provide habitat for the species of fish, marine mammals, and birds that I observe and enjoy there. My enjoyment of the marine environment is harmed by the failure of the Navy to follow the mandatory procedures established by the National Environmental Policy Act, the Endangered Species Act, and the Coastal Zone Management Act in undertaking these exercises, because the Navy's failure to comply with federal environmental law in its training with sonar makes it more likely that harm will come to the marine life that I enjoy in this area. Harm to dol-

phins, whales, seals, fish, and other marine life in these areas from Navy sonar lessens the satisfaction I feel while surfing, fishing, and kayaking and lessens the chances that I will be able to observe these magnificent species. It therefore harms my recreational, personal and aesthetic interests.

11. I believe that the Navy's challenged exercises in Southern California waters have harmed and will continue to harm the marine species in the areas where it conducts active sonar testing, and that my own enjoyment and engagement with marine mammals and other marine life has been impaired and will continue to be impaired by the Navy's failure to properly consider the harm to marine life caused by its exercises.

Executed on June 8, 2007, at San Diego, Ca.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ STEPHEN CUMMINGS
STEPHEN CUMMINGS

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF CATHERINE DISHION IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF CATHERINE DISHION

I, CATHERINE DISHION, declare as follows:

1. I reside in Santa Barbara, California. I have personal knowledge of the matters set forth herein.

2. I have been a member of Natural Resources Defense Council ("NRDC") since 1984. I joined and continue to support NRDC because of my appreciation of and concern for the environment and its inhabitants, especially whales and dolphins.

3. I have been scuba diving in Santa Barbara and the Channel Islands for over twenty years, and I get great pleasure from observing healthy marine animals in their natural environment. I scuba dive approximately once a month in the Santa Barbara harbor as well off the coasts of Santa Cruz, Santa Rosa, Anacapa, and San Miguel Islands. I see fish and, sometimes, whales while scuba diving, and at San Miguel Island I've seen seals as well.

4. One of the greatest experiences I have had while scuba diving in Santa Barbara was the time that I heard whales singing to each other underwater. I was about forty feet underwater, and while I could not see the whales, and I could hear them. Witnessing this event was a wonderful experience for me, and made me realize how delicate and complex the whales' communication system is.

5. I also snorkel in Santa Barbara and the Channel Islands, as well as boat. I used to own a boat and go boating in the Santa Barbara Channel every weekend. Now I belong to a sailing club and regularly use motor boats and sailboats to visit the Channel Islands. We go about 22 miles off shore from the Santa Barbara Harbor, and usually visit Santa Cruz Island. While boating, I almost always see whales, and groups of dolphins frequently come up to our boat. I greatly enjoy watching these animals.

6. I am very concerned and troubled by the U.S. Navy's use of mid-frequency sonar in training exercises in Southern California waters. I strongly believe that the whales, dolphins and other marine life in these waters deserve protection, and I am troubled by the knowledge that this unnecessary use of sonar is causing these

animals harm. When these creatures are harmed, I am harmed as well because my ability to observe them in their natural habitat is diminished. After hearing the whales singing in Santa Barbara, I have a great appreciation for the way they communicate, and I am upset by the way the sonar is disrupting these communications.

7. I am aware that the Navy is planning two years' worth of major training exercises using mid-frequency sonar in and around the waters where I regularly scuba dive, snorkel, boat, and observe fish, whales and dolphins. My enjoyment of these activities is harmed by the Navy's failure to follow the mandatory procedures established by the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and the Coastal Zone Management Act in undertaking these exercises, because the Navy's failure to comply with federal environmental law in its training with sonar makes it more likely that harm will come to the fish, whales and dolphins that I enjoy watching in this area. Any harm to these and other marine species lessens the chances that I will be able to observe them. The Navy's use of sonar therefore harms my recreational, aesthetic, and personal interests.

Executed on June 8, 2007, at 2007, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ CATHERINE DISHION
CATHERINE DISHION

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF RICHARD HICKS IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF RICHARD HICKS

I, RICHARD HICKS, declare as follows:

1. I reside in Cardiff-By-The-Sea, California. I have personal knowledge of the matters set forth herein.

2. I have been a member of the Natural Resources Defense Council ("NRDC") since 1988. I joined and continue to support NRDC because of my general concern for the protection of the environment through litigation.

3. I have interacted with the southern California marine environment for most of my life. As a teenager growing up in San Diego, I often snorkeled and dove for abalone off the coast. Since 1996, I have lived in Cardiff-By-The-Sea, where I enjoy a 180-degree view of the ocean from my deck. On a very clear day I can see Catalina Island, San Clemente Island, and the Coronado Islands. The opportunity to see the ocean and observe marine wildlife each day is essential to the quality of my life. And, as a serious ocean sailor and avid snorkeler, my enjoyment of the marine environment is fundamentally linked to the health of the oceans and marine species.

4. I started sailing in San Diego as a teenager and took it up seriously in 1991 after I retired. I successfully completed the American Sailing Association ("ASA") courses for Basic Keelboat Sailing, Basic Coastal Cruising, Coastal Navigation, and Bareboat Chartering. I am qualified to act as a skipper on monohulls and catamarans up to 50 feet in length. Between 1991 and 1996 I was a member of Marina Sailing in Marina Del Rey, California, and sailed approximately once a month off the coast of Los Angeles. Since 1996 I have been a member of the Harbor Island Yacht Club in San Diego, and typically sail about three times a month, year-round. Most of my sailing is day-sailing in San Diego Harbor. However, I also sail offshore, off Point Loma and up as far as Oceanside, and out to the Coronado Islands, which are

approximately 12 miles off Point Loma. I also, from time to time, have sailed on two or three-day overnight sails to Catalina Island (out of Long Beach) or to the Channel Islands (out of Ventura, Oxnard, or Santa Barbara). My trips to the Channel Islands have included trips to Santa Cruz Island and Anacapa Island.

5. During the past 15 years I have been on 24 bareboat sailing charters with The Moorings charter company and have acted as the skipper on all but five of these charters. These charters, which have been between 7 and 11 days in length, have been in the Pacific (Tahiti, Tonga, and Australia), the Caribbean (British Virgin Islands, U.S. Virgin Islands, St. Martin, St. Kitts, St. Barts, Anguilla, Martinique, St. Lucia, Grenada and the Grenadines, Belize, and Abaco, Bahamas), and Croatia.

6. I greatly enjoy observing marine wildlife from my home and while sailing and snorkeling. From my deck and while sailing in southern California, I frequently see sea lions, dolphin, and a variety of seabirds and shorebirds including pelicans, egrets, great blue herons, and gulls. I also observe fish (including Garabaldis, the state's official marine fish) while snorkeling in this area. During the migration season from about December to March each year, I often see gray whales as well. Until recently, I could sometimes see whales from my deck during migration season, but in the past year it has been necessary to go offshore to see them. I greatly enjoy observing the gray whales on their migration, and each year I make at least one whale-watching sailing trip out of San Diego Harbor. I plan to go whale-watching again this winter.

7. My experiences sailing and snorkeling all over the world have included thrilling interactions with marine life. Once, while snorkeling in Belize, I encountered a school of fish so dense that I could not see through it, and so long that I could not see either end. It was truly awesome to observe such a massive group of fish. On another occasion, I swam with sea lions in the Galapagos. Being so close to these animals that I could touch them was deeply moving. Such experiences have strengthened my sense of connection to marine mammals and marine species generally.

8. In general, observing wildlife is a very special and immensely fulfilling aspect of my activities in the marine environment. The opportunity to observe and interact with marine species contributes greatly to my enjoyment of sailing and snorkeling both here in San Diego and abroad.

9. Ocean sailing is an extremely important aspect of my life, and I plan to continue sailing off the coast of southern California as long as I am able, including trips offshore of Point Loma, trips to the Coronado Islands, and trips to the Channel Islands.

10. Through my encounters with whales, sea lions, dolphins, fish, and sea birds, I have developed a deep appreciation for marine mammals and for other marine species in general. I greatly enjoy the opportunities I have to view and interact with marine life. As a result, I am deeply concerned about the effects of active sonar systems on marine mammals and other marine species. I am aware of and very concerned by scientific evidence indicating that the use of active sonar may pose a serious threat to marine mammals by damaging their hear-

ing, altering their migration patterns, or disrupting other basic life functions.

11. As I understand it, the U.S. Navy has approved fourteen major sonar training exercises using mid-frequency active sonar systems in and near the waters where I sail in southern California. These waters provide habitat for the whales, sea lions, dolphin, fish, and sea birds that I enjoy observing here. To the extent that the Navy has failed to follow the mandatory procedures established by the National Environmental Policy Act, the Endangered Species Act, and the Coastal Zone Management Act in undertaking these exercises, or has otherwise failed to comply with federal environmental law in its training with sonar, I believe that it is more likely that harm will come to the marine life in this area. Any harm to marine mammals or other marine species from Navy sonar lessens the chances that I will be able to observe whales, sea lions, dolphin, fish, sea birds, and other marine species, and harms my recreational, personal and aesthetic interests.

12. I believe that the Navy's activity has harmed and will continue to harm the marine species in the areas where it conducts active sonar testing, and that my own enjoyment of marine mammals and the marine environment has been impaired and will continue to be impaired by the Navy's failure to properly consider and mitigate the harm to marine life caused by its exercises.

Executed on 14, June 2007, at CARDIFF, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ RICHARD HICKS
RICHARD HICKS

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF SUSAN JORDAN IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF SUSAN JORDAN

I, SUSAN JORDAN, declare as follows:

1. I reside at 2920 Ventura Drive, Santa Barbara, California, 93105. I have personal knowledge of and, if called upon as a witness, I could and would testify competently to the statements contained herein.

2. I am a Board Member with the League for Coastal Protection (LCP). I joined the Board of the League for Coastal Protection in 1995 because I share its goals of supporting an effective, strong program of coastal protection for California and the protection, enhancement, and restoration of all coastal resources.

3. I have a MSW from the University of Pennsylvania and have devoted the last 12 years of my life to protection of coastal and marine resources. In addition to my service on the board of the League for Coastal Protection, I founded the California Coastal Protection Network in 1999 and co-founded Vote the Coast in 1996. In 1997, I was selected by the National Oceanic and Atmospheric Administration (NOAA) as the Volunteer of the Year for Excellence in Coastal Resource Management.

4. I have been closely involved with the issue of the impacts of high-intensity sound on marine life since 1994. I have extensive experience working to reduce ocean noise pollution in our oceans and, in particular, experience with the Navy's use of high-intensity active sonar in the ocean.

5. In my capacity as a board member of LCP, I was part of a negotiated settlement with the Scripps Institution of Oceanography that called for the expanded development of a Marine Mammal Research Program to precede deployment of Scripps' Acoustic Thermometry of Ocean Climate (ATOC) program, which used high-intensity sound to conduct research on the oceans. I was selected to serve as one of two citizen observers on the ATOC Marine Mammal Research Advisory Board established by Scripps and served in that capacity for several years. I was also appointed by the California Coastal Commission to serve as the Citizen Observer to the Low

Frequency Active (LFA) Sonar Technical Advisory Group overseeing research into the impacts of the Navy's LFA sonar to marine species. As part of that group, I sailed on the Navy's Choury Chouest at the Navy's invitation to observe LFA research testing in California waters. In 1996, I was invited by the U.S. Minerals Management Service to join the High Energy Seismic Standards Review Committee to review high-energy seismic noise standards for the Southern California Bight.

6. In recent years I have continued my advocacy to limit harm to marine life from high-intensity noise sources in the oceans, including high-intensity Navy sonars. Most recently, in 2005 and 2007 I testified before the California Coastal Commission about the harms to marine life caused by intense underwater noise sources.

7. As someone who is devoted to the protection of marine and coastal resources, I am deeply concerned about the effects of intense underwater noise on marine mammals, fish, and other marine life. I have regularly recreated in the waters off of California, especially in the Santa Barbara Channel and around the Channel Islands. I have made numerous whale-watching trips off southern California and have observed Blue and Gray whales, dolphins, and other species in the Santa Barbara Channel and in other southern California waters. Seeing healthy whales, dolphins, and other marine life along our coast brings me great joy, recreational benefit, professional satisfaction, and aesthetic benefit.

8. I plan to continue to observe and enjoy marine mammals and other marine life in these waters, as the health of these species provides one of the main sources

of inspiration for my work. I intend to take at least one whale-watching boat trip out of Santa Barbara in the next year.

9. I am particularly concerned by the Navy's training with mid-frequency active sonar in waters off of southern California and in waters where its use of sonar may affect marine life off of California. The Navy's conduct of the sonar exercises challenged in this case without compliance with federal environmental law makes it more likely that marine life in waters off the coast of California will be harmed by intense underwater noise.

10. The Navy's conduct of the challenged exercises in its SOCAL Range Complex and Point Mugu Sea Range, both off southern California and encompassing several of the Channel Islands, has obvious potential to harm marine life along the California coast, including but not limited to many species of whales, dolphins, porpoises, and fish.

11. I have therefore been harmed and will continue to be harmed by the Navy's conduct of these particular exercises without compliance with law and without taking steps necessary to protect marine life from high-intensity sonar. If whales and other marine life in waters off the California coast are injured by the Navy's mid-frequency sonar training exercises challenged in this case, my use and enjoyment of waters off of southern California, including the joy I get from observing healthy whale populations in these waters, will be severely diminished.

12. In order to provide the appropriate safeguards, it is essential that the Navy follow the explicit provisions of the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and the Costal Zone

Management Act in its conduct of the exercises challenged here.

13. As someone who has devoted considerable time and effort in arguing for full enforcement of environmental laws to protect marine life, I am deeply disturbed by the Navy's actions to sharply undercut the protections these laws provide.

Executed on June 15, 2007, at Santa Barbara, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ SUSAN JORDAN
SUSAN JORDAN

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF NANCY KELTNER IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF NANCY KELTNER

I, NANCY KELTNER, declare as follows:

1. I have personal knowledge of the facts stated herein and, if called upon to testify, could and would give competent testimony thereto.

2. I am the Director of Operations for Ocean Futures Society ("Ocean Futures") and am knowledgeable about Ocean Futures' organizational mission and programs.

3. Ocean Futures is a marine conservation and education organization based in California. Its mission is to explore our global ocean, inspiring and educating people throughout the world to act responsibly for its protection, documenting the critical connection between humanity and nature, and celebrating the ocean's vital importance to the survival of all life on our planet.

4. Ocean Futures is a California nonprofit corporation organized under section 501(c)(3) of the United States Revenue Code. It is headquartered and has its principle place of business at 325 Chapala Street, Santa Barbara, California.

5. Ocean Futures is a web-based membership organization. Currently, we have over 10,000 registered members. Ocean Futures' members live throughout the United States and around the world, especially in coastal regions, and have a deep appreciation for the marine environment and its inhabitants.

6. In order to realize its mission, Ocean Futures is actively involved in educational and advocacy projects aimed at encouraging wiser choices for our marine environment. Past and current projects include a television series aired on PBS entitled "Jean Michel Cousteau Ocean Adventures," which focuses on spectacular marine habitats and threats to marine species, and our Ambassadors of the Environment Education Program, currently established on Catalina Island and in Santa Barbara, Hawaii, the Cayman Islands, British Virgin

Islands, and French Polynesia. In addition, Ocean Futures is actively involved in the development of and educational training for our Sustainable Reefs Program, which is a global coral reef education and awareness initiative for coastal and island nations with coral reefs in peril.

7. Our Ambassadors of the Environment Education Program ("Ambassadors Program") aims to educate schoolchildren about the marine environment and marine life, with the hope of inspiring children to be better stewards of our natural world. The program has two locations in southern California, one on Catalina Island and one at El Capitan Canyon, just north of Santa Barbara. The program takes children into a natural setting in order to help them connect to nature, both on day trips and on longer overnight stays of up to a week or longer. Students are introduced first-hand to the natural wonders of the environment through naturalist hikes, snorkeling excursions, underwater marine tours, and kayaking trips. These trips are led by Ocean Futures-trained counselors, and the students are simultaneously taught a conservation curriculum designed by Ocean Futures that emphasizes issues of biodiversity, the unique characteristics of the region, human impacts and resource management. Students also participate in long-term monitoring and restoration programs.

8. While kayaking, snorkeling, or taking underwater marine tours off of Catalina and El Capitan, Ambassador Program students typically see fish, seabirds, small marine mammals, and other marine life. These encounters with a wide diversity of marine life are integral to the success of the Ambassadors Program, since the educational mission of the program depends on children

observing and interacting with marine life. The Ambassadors Program and Ocean Futures are therefore harmed by the Navy's failure to follow the mandatory procedures established by the National Environmental Policy Act, the Endangered Species Act, and the Coastal Zone Management Act in undertaking the exercises challenged in this case, which as I understand it are set to occur in or near waters that provide habitat for the marine life our Ambassadors Program schoolchildren observe at El Capitan and Catalina Island. The Navy's failure to comply with federal environmental law in its training with sonar makes it more likely that harm will come to the fish, marine mammals and other marine life the Ambassadors Program depends on for its success. Any harm to these and other marine species lessens the chances that schoolchildren will be able to observe them in these locations. The Navy's use of sonar therefore threatens the success of the Ambassadors Program and frustrates Ocean Futures' ability to fulfill its mission. This frustration of mission could also harm Ocean Futures economically, as the Ambassadors Program at Catalina Island and El Capitan brings grant revenue and other revenue to Ocean Futures, and a less successful program might lead to fewer revenues.

9. Ocean Futures creates action partnerships with leading environmentalists and organizations, proposing cooperative solutions for business, industry, educators, and government, particularly with a focus on future generations, raising hope for the health of the ocean through active participation. Ocean Futures also works for the adoption and enforcement of laws and treaties aimed at protecting marine life.

10. Among Ocean Futures' priorities are projects to conserve healthy marine habitats and to protect marine mammals, our biological counterparts in the sea. Ocean Futures strives to protect the oceans because, in the words of our founder, Jean-Michael Cousteau, "protect the oceans, and you protect yourself."

Executed on June 15, 2007, at Santa Barbara, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ NANCY KELTNER
NANCY KELTNER

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF GREGG LICHTENSTEIN IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF GREGG LICHTENSTEIN

I, GREGG LICHTENSTEIN, declare as follows:

1. I reside in San Diego, California. I have personal knowledge of and, if called upon as a witness, I could and would testify competently to the statements contained herein.

2. I have been a member of Natural Resources Defense Council ("NRDC") since 1989. I joined and continue to support NRDC because I believe in NRDC's

work, especially in protecting marine life such as whales and dolphins.

3. I have a B.S. in Biology from Stanford, an M.D. from Tufts, and an M.B.A. from San Diego State University.

4. I thoroughly enjoy spending time in and around the ocean, in part because of the opportunity to view marine life. I kayak, sail, and walk along the beach near La Jolla Shores on a regular basis. I kayak off the coast in San Diego, as well as in the Channel Islands, specifically off the north side of Santa Cruz Island. I frequently sail in the San Diego Harbor and a few miles off shore, in the areas south and west of Point Loma. When I sail, I regularly see seals and sea lions, and I sometimes see dolphins. Seeing marine animals is always a special experience for me and brings me great pleasure. When walking on the beach, I see sea birds, and enjoy this as well.

5. I also visit the Children's Pool in La Jolla to see the seals and sea lions, which brings me great joy.

6. Two years ago, my wife and I traveled to Guerrero Negro Lagoon to view the gray whales that migrate past the coast of California. This experience made me feel a special connection with whales. Protecting them is very important to me.

7. I plan to continue sailing, kayaking, and walking on the beach in the waters off the coast of San Diego in the future.

8. As I understand it, the U.S. Navy is planning two years' worth of major training exercises using mid-frequency active sonar systems in and near the waters where I sail and kayak, and in waters that provide habi-

tat for the marine mammals and birds that I observe and enjoy there. My enjoyment of the marine environment is harmed by the failure of the Navy to follow the mandatory procedures established by the National Environmental Policy Act, the Endangered Species Act, and the Coastal Zone Management Act in undertaking these exercises, because the Navy's failure to comply with federal environmental law in its training with sonar makes it more likely that harm will come to the marine life that I enjoy in this area. Harm to dolphins, whales, seals, fish, and other marine life in these areas from Navy sonar lessens the satisfaction I feel while sailing and kayaking and lessens the chances that I will be able to observe these magnificent species. It therefore harms my recreational, personal and aesthetic interests.

9. I believe that the Navy's challenged exercises in Southern California waters have harmed and will continue to harm the marine species in the areas where it conducts active sonar testing, and that my own enjoyment of marine mammals and other marine life has been impaired and will continue to be impaired by the Navy's failure to properly consider and mitigate the harm to marine life caused by its exercises.

Executed on June 12, 2007, at San Diego, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ GREGG LICHTENSTEIN, M.D., M.B.A
GREGG LICHTENSTEIN, M.D., M.B.A.

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF NANCY MARR IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF NANCY MARR

I, NANCY MARR, declare as follows:

1. I reside in Santa Barbara, California. I have personal knowledge of the matters set forth herein.

2. I am currently a member of the Natural Resources Defense Council ("NRDC") and have been a member since 1997. I am also currently a member of Ocean Futures Society and have been a member for many years.

3. I have had the opportunity to interact with a wide variety of marine mammals in many locations all around the globe, and hope to continue having such interactions for the foreseeable future. I care deeply about marine mammals, and any harm that befalls them affects me as well.

4. For over 16 years I have been domestic companions with Jean-Michel Cousteau and have accompanied him on numerous sea voyages spanning large portions of the globe. These trips have given me countless opportunities to interact with marine mammals and other marine life and to snorkel and SCUBA dive in their vicinity.

5. I am an "ambassador of the environment" and travel frequently on commercial cruise ships.

6. I spend time on the coast and in the waters of Southern California, especially around the Channel Islands, including around the Channel Islands National Marine Sanctuary and Santa Catalina Island. I travel between San Pedro and Catalina Island by boat each summer. I have dived out of San Pedro and I snorkel on Catalina Island, sometimes every day that I'm there. I often see pods of hundreds of dolphins, numerous leopard sharks, and fish in these waters and, sometimes, whales. Viewing this marine wildlife is a source of great pleasure for me. As a resident of Santa Barbara, I plan to continue regularly enjoying our waters off Southern California and the marine life in them, including whales, dolphins, and fish.

7. I understand that the Navy has authorized and is planning to conduct fourteen major sonar training exercises in its Southern California offshore training ranges, including in and around the waters where I regularly dive, work, recreate, and observe marine life.

When the Navy trains with mid-frequency active sonar in these waters without complying with federal environmental statutes, it endangers the marine life in these waters and harms my recreational and aesthetic interests.

8. I care deeply about marine life and consider interactions with marine mammals and other marine life to be an integral part of my life. I spend large portions of every year on the ocean, as well as significant periods of time actively advocating for the preservation of marine mammals, sea turtles, fish, and other marine life. It is vitally important to me that we find a way to protect these species and their habitats from human harm.

9. I have no intention of curtailing my traveling, my snorkeling and SCUBA diving, or my observations of and interactions with marine mammals.

10. I have read quite a bit about the harmful effects that sonar can have on marine mammals and I am intensely concerned that the Navy's training exercises using mid-frequency active sonar are harming and will continue to harm marine life, including marine mammals, fish, sea turtles, and other species.

11. As interacting with marine mammals is such an important component of my life, any harm that befalls marine mammals harms me as well. I am greatly saddened when I hear about human actions that injure populations of marine mammals. More specifically, I am concerned that the Navy's training with mid-frequency active sonar in waters off Southern California could jeopardize the health of marine species in this area. If marine mammals, fish, or sea turtles were to be harmed due to the Navy's training with mid-frequency active sonar in this area, my traveling, snorkeling and SCUBA

diving experiences, which are a very integral part of my life, would be far less enjoyable.

12. I am also concerned that training with mid-frequency active sonar may impair the hearing of large numbers of these animals. As marine mammals largely communicate through sound, and as a portion of my enjoyment of marine mammals comes through listening to them communicate and sing while snorkeling and SCUBA diving, I worry that impairment of their hearing could have devastating effects on their populations and could potentially harm them and also cause them to stop communicating and singing, which would diminish the quality of my life as well. The risk of unnecessary harm is only worsened by the Navy's failure to obey the Coastal Zone Management Act and other laws that safeguard these species and their habitat.

13. For all of these reasons, I have been and will continue to be harmed by the failure of Defendants to follow the mandatory procedures governing the protection of marine life and endangered species as set forth by the Endangered Species Act, the Coastal Zone Management Act, and the National Environmental Policy Act.

Executed on June 12, 2007, at Santa Barbara, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ NANCY MARR
NANCY MARR

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF KENNETH MCKENNA IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF KENNETH MCKENNA

I, KENNETH MCKENNA, declare as follows:

1. I reside in Santa Barbara, California. I have personal knowledge of the matters set forth herein.

2. I have been a member of Natural Resources Defense Council ("NRDC") since 2004 and I continue to support NRDC because of its efforts at protecting the oceans and marine life that I value so much.

3. I spend a great deal of my time in and around Santa Barbara waters and the Channel Islands. I go to

the beach very often; I usually go to Rincon Beach but also visit other beaches along the coast of Santa Barbara. I also regularly kayak, swim, and scuba dive in the waters around the Channel Islands.

4. I kayak as often as I can, usually more in the summer months. I leave out of Santa Barbara Harbor and transit the Santa Barbara Channel by boat, usually to Santa Cruz and Anacapa Islands. In the boat on my way out to kayak, I sometimes see grey whales and humpback whales. I kayak in waters near Santa Cruz and Anacapa Islands. One of things I love most about kayaking in this area is that I see so many dolphins. I frequently have very close encounters with them, as they swim very close to my kayak. It is an exhilarating experience to be so close to them in their natural habitat. Seeing all of these beautiful creatures is a very special experience for me.

5. I am also an avid scuba diver. I scuba dive a few times per month off the coasts of Santa Cruz, Santa Barbara, and Anacapa Islands. I also occasionally dive off the western side of San Clemente Island, which offers unique opportunities for southern California divers. When I dive, I see many reef and kelp fish, sea lions, and seals. I love being so close to these animals when I dive; it brings me great joy to share the sea with them.

6. I am aware that the U.S. Navy is currently conducting a series of fourteen major training exercises using mid-frequency sonar in and around the waters where I regularly swim, scuba dive, and kayak. The Navy's failure to follow the provisions of the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA) and the Costal Zone Management Act in its conduct of the exercises challenged here

makes it more likely that marine life in waters off the coast of Southern California will be harmed by intense underwater noise. I am very concerned that the Navy's challenged use of mid-frequency sonar is harming the dolphins, whales, sea lions, seals, fish and other marine animals I enjoy watching when I am in the water. Any harm to these and other marine species lessens the chances that I will be able to observe them, and diminishes my use and enjoyment of the marine habitat in this area.

7. My aesthetic, recreational, and personal interests have therefore been harmed and will continue to be harmed by the Navy's conduct of the exercises specified in the Complaint without compliance with law and without taking steps necessary to protect marine life from mid-frequency sonar.

Executed on June 11, 2007, at Santa Barbara, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ KENNETH McKENNA
KENNETH MCKENNA

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL. DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF HELEN BERKELEY MEIGS IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF HELEN BERKELEY MEIGS

I, HELEN BERKELEY MEIGS, declare as follows:

1. I reside in Santa Barbara, California.

2. I have been a member of Natural Resources Defense Council ("NRDC") since 1997. I joined and continue to support NRDC because of my deep interest in protecting whales.

3. I attended Stanford University and the University of Southern California, and was Director of Envi-

ronmental Education for the Las Virgines Unified School District in Southern California.

4. I live on a cliff overlooking the Santa Barbara Channel and the Channel Islands, and I spend a lot of time whale- and dolphin-watching from my deck. I regularly see grey whales on their migration path through the Channel, and occasionally I see blue whales as well. Watching these beautiful creatures brings me great pleasure.

5. I have traveled to Baja to watch whales give birth, and because of this experience I feel a special connection with whales. Watching them swim through the Channel in front of my house on their migration north from Baja is particularly special for me because I have seen them up close and personal.

6. I also regularly go on commercial whale watching trips in the Channel Islands, and have been doing so for nearly twenty years. I take my children and grandchildren on whale watching trips between the mainland and the Channel Islands to see gray whales. Our trips leave from Santa Barbara harbor and take us near the Santa Cruz, Santa Rosa, and Anacapa islands. I also go on whale watching trips to the southwestern sides of the Santa Cruz and Santa Rosa Islands to see blue whales. I look forward to these trips, and recently bought tickets to take another whale watching trip with my son and his family in the Channel Islands in the next two to three months. I plan to continue to whalewatch in the Channel Islands, including in and around Santa Cruz, Santa Rosa, and Anacapa islands, over the next two years, and I expect to continue to witness the gray whale migrations from shore and from boat.

7. I also kayak in the waters between Santa Barbara and the Channel Islands, generally leaving from either the beach by the Santa Barbara harbor next to the fishing pier, or Hope Ranch Beach. Often, the whales come close enough that I can see them from my kayak. It is a truly unique and wonderful experience to be so close to such majestic creatures, and I plan to continue to kayak in these waters.

8. Whales are very special to me and my family. In addition to supporting NRDC in its efforts to protect them and participating in activities like kayaking and whale watching, my family also commissioned a Greenpeace boat to protect whales. When my grandson passed away, we commissioned a Greenpeace boat in his name, called the 'Patrick Grech', used to stop whaling. I am very passionate about saving the whales, as being able to watch them, both from my home, boats, and kayaks, brings my great joy.

9. I am deeply concerned that mid-frequency sonar causes harm to the whales and dolphins I treasure. It upsets me that these precious creatures will suffer unnecessary harm from the effects of mid-frequency sonar.

10. I am aware that the U.S. Navy has begun and plans to continue conducting a series of fourteen major training exercises in and around the waters where I regularly kayak and observe whales and dolphins. My enjoyment of the marine environment is harmed by the Navy's failure to follow the mandatory procedures established by the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and the Coastal Zone Management Act in undertaking these exercises, because the Navy's failure to comply with federal environmental law in its training with sonar makes

it more likely that harm will come to the whales and dolphins that I enjoy in this area. Any harm to these and other sea creatures lessens the chances that I will be able to observe these marine animals. The Navy's use of sonar therefore harms my recreational, aesthetic, and personal interests.

11. I therefore believe that I have been harmed and will continue to be harmed by the Navy's challenged activities without compliance with law and without taking steps necessary to protect marine life from high-intensity sonar. If whales and other marine life in waters off the California coast are injured by the Navy's mid-frequency sonar training exercises challenged in this case, my use and enjoyment of the waters in and around Santa Barbara and the Channel Islands, including the pleasure that get watching healthy whale populations in these waters brings me, will be greatly lessened.

Executed on June 14, 2007, at Santa Barbara, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ HELEN BERKELEY MEIGS
HELEN BERKELEY MEIGS

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL.,DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF SABRINA NAPIER IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF SABRINA NAPIER

I, SABRINA NAPIER declare as follows:

1. I reside in San Diego, California. I have personal knowledge of the matters set forth herein.

2. I have been a member of the Natural Resources Defense Council ("NRDC") since 1998. I joined and continue to support NRDC because of my general concern for the protection of the environment and the well-

being of animals, and because I regard NRDC as particularly effective in protecting the oceans and whales.

3. I have lived in San Diego for 25 years. From living within five miles of the ocean and having easy access to the beaches and ocean, I have developed a strong sense of connection to the ocean, whales, and other marine species. Observing these creatures brings me great pleasure and their health and well being is very important to me. My husband and I consider ourselves "sea-animal people" and their continued existence is very important to us.

4. For the past 19 years, I have visited Pacific Beach Marina in San Diego seasonally to jog or walk along the beach. My husband and I enjoy jogging and walking along the beach because it is a great way to observe the ocean and marine wildlife. I typically see a variety of seabirds and gulls at the beach, and occasionally observe dolphins, seals, and walruses off shore. I greatly value the opportunity to interact with the coastal environment as part of my regular exercise routine, and plan to continue regularly visiting the beach.

6. Approximately once a year over the past 10 years, I have gone on a whale-watching cruise or visited aquariums, marine parks, museums, or oceanviewing areas (including SeaWorld and the Rosecrans Cabrillo National Monument at Point Loma) to observe and interact with whales and other marine mammals. I find seeing whales extremely special and deeply moving because these creatures are so large and majestic, yet so vulnerable. Throughout modern history, whales have endured numerous struggles for their survival, and today they continue to face large-scale threats. Because I am

acutely aware of whales' delicate survival, I am deeply concerned for their well-being and particularly cherish opportunities to observe and interact with them. I plan to continue seeking out opportunities to observe them in the San Diego area, and will return to the Point Loma overlook to observe marine life within the next year.

7. Having lived in close proximity to the ocean for the past 25 years, I consider observing and interacting with species in the marine environment to be staples of my quality of life. Through visiting the various aquariums, whalewatching, and jogging and walking along the beach I have developed a deep sense of connection to marine species. I feel a strong sense of connection to whales in particular, and highly value the opportunities I have to observe them in the marine environment. As a result, I am deeply concerned about the effects of active sonar systems on whales, other marine mammals, and other marine species generally. In particular, I am aware of and very concerned by scientific evidence indicating that the use of active mid-frequency sonar poses a serious threat to whales and other marine mammals by causing physical injury or disrupting their basic life functions.

8. As I understand it, the U.S. Navy has begun and plans to continue a series of fourteen major training exercises using mid-frequency active sonar systems in and near the waters where I currently visit beaches and observe wildlife off the coast of San Diego, in waters that provide habitat for whales, dolphins, seals, walruses, seabirds, and other marine species I observe and enjoy there. My enjoyment of the marine environment is harmed by the failure of the Navy to follow the mandatory procedures established by the National Environ-

mental Policy Act, the Endangered Species Act, and the Coastal Zone Management Act in undertaking these exercises, because the Navy's failure to comply with federal environmental law in its training with sonar makes it more likely that harm will come to the marine life that I enjoy in this area. Any harm to marine mammals or other marine species from Navy sonar lessens the chances that I will be able to observe marine species, and harms my recreational, personal, and aesthetic interests.

9. I believe that the Navy's challenged activities have harmed and will continue to harm the marine species in the areas where it conducts active sonar testing, and that my own enjoyment and engagement with marine species has been impaired and will continue to be impaired by the Navy's failure to properly consider and mitigate the harm to marine life caused by its exercises.

Executed on June 5th, 2007, at 5:00 p.m.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ SABRINA NAPIER
SABRINA NAPIER

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF MELVIN L. NUTTER IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF MELVIN L. NUTTER

I, MELVIN L. NUTTER, declare as follows:

1. I have personal knowledge of the facts stated herein and, if called upon to testify, could and would give competent testimony thereto.

2. I reside at 5730 East Deborah Street, Long Beach, California. I have practiced law and resided in Long Beach, California since 1965. I am the chair of the League for Coastal Protection and have served in that

capacity for over ten years. I joined the League in 1986, after serving for several years on the California Coastal Commission as a Commissioner.

3. The League for Coastal Protection is a California nonprofit public benefit corporation incorporated in 1982. It consists of a coalition of public interest and environmental organizations and individuals created to protect and support coastal resources. The stated goals and objectives of the League for Coastal Protection are to: (1) support an effective, strong program of coastal protection for California; (2) protect, enhance and restore natural coastal resources, and the right of citizen access to them; (3) maintain sufficient funding for strong coastal programs; (4) increase public awareness of California's coast protection program; (5) provide reliable, timely information about coastal issues; (6) monitor federal, state and local agency actions on state coastal matters; (7) establish a legislative program to support the Coastal Act, propose new strengthening legislation and resist weakening legislation; and (8) establish coastal protection advocates as an effective political constituency.

4. The League for Coastal Protection focuses on issues that come to the California Coastal Commission, but also works at both the local and national level when the implications for coastal resource impacts are significant. The League also weighs in on legislative matters in Sacramento that may affect the coast. In addition, the organization helps prepare and distribute a "scorecard" on Coastal Commission decisions so that the public can know how individual Commissioners are performing. When deemed appropriate, the League initiates or

participates in litigation to ensure that the laws protecting the coast of California are enforced.

5. Of particular interest and concern to the League for Coastal Protection for at least the past ten years has been and continues to be the potential impact of high-intensity noise on marine mammals, fish, and other species in the Pacific Ocean. In furtherance of that interest, the League has been represented by Board member Susan Jordan in innumerable meetings and before decision making bodies involving the Scripps' Acoustic Thermometry of Ocean Climate Program (ATOC), the Navy's Low Frequency Active Sonar Program (LFA) and the California Coastal Commission. The League for Coastal Protection has also written to the Navy objecting to its use of high-intensity, mid-frequency active sonar without complying with federal environmental laws.

6. The League's position is that the United States Navy's use of high-intensity, mid-frequency active sonar in the specific exercises and training activities challenged in this case violates the Coastal Zone Management Act, the National Environmental Policy Act, the Endangered Species Act and the Administrative Procedure Act. The League, its officers and its members have been and will continue to be harmed by the Navy's conduct of the specific mid-frequency sonar training activities challenged in this case without complying with these laws and without taking appropriate and available measures for mitigating the system's impacts, because the challenged activities have harmed or have the potential to harm marine species along Southern California's coast.

7. In particular, the League, its officers and its members have been and will continue to be harmed by the set of fourteen major training exercises the Navy has begun and plans to continue to conduct over the next two years on its Southern California ranges and operating areas, all of which have harmed or have the potential to harm California coastal species.

Executed on June 5, 2007, at Long Beach, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ MELVIN L. NUTTER
MELVIN L. NUTTER

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL, PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL, DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF ELIZABETH ORECK IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF ELIZABETH ORECK

I, ELIZABETH ORECK, declare as follows:

1. I reside in Beverly Hills, California. I have personal knowledge of the matters set forth herein.

2. I have been a member of the International Fund for Animal Welfare ("IFAW") for several years, at least since 2005. I joined and continue to support IFAW because of my love for marine mammals and because of my admiration and appreciation for the work IF AW does.

I believe that IFAW's approach to animal welfare issues is particularly effective.

3. I have an abiding appreciation for marine wildlife that I have made the focus of much of my time over the last few years. I enjoy whalewatching, snorkeling, diving, and underwater photography and have pursued these activities in various places throughout the world. In southern California, I often walk along the beaches in Santa Monica and Malibu, both for pleasure and as part of the volunteer activities I describe below. When walking along these beaches, I regularly look for marine animals, including marine mammals, and it gives me great pleasure to see them.

4. I am a wildlife rehabilitator, which includes certification in marine mammal rescue that I achieved after taking classes from the California Wildlife Center in Malibu (the "Wildlife Center") in 2006. With this certification, I work regularly as a marine mammal rescue volunteer with the Wildlife Center. About 150 times per year, the Wildlife Center receives calls for volunteers to help with a stranded marine mammal, and I assist with these rescues whenever possible, about four times on average a year. I help rescue marine mammals stranded on the beach or on the rocks, often victims of domoic acid seizure, oil spills, fish hooks, and/or fishing wire wrapped around fins. I help corral the animal into a crate, bring it back to the Wildlife Center, and do as much treatment, stabilization, and rehabilitation as I can so that the animal can be transported to a marine mammal treatment center in Long Beach.

5. The area that I regularly cover as a marine mammal rescue volunteer spans the California coastline

from the Point Mugu naval base in Ventura County south to Santa Monica. The animals that I am called upon to assist are found stranded anywhere along this portion of the coastline. The months during which I get the most calls are from February to mid-August, though the work is year-round. The species of marine mammal I typically assist with are sea lions, elephant seals, harbor seals, and dolphins. This year, I have noticed an increase in the number of rescues of younger sea lions not yet weaned from their mothers. It appears to me that younger sea lions are dying off in higher numbers than they have in the past.

6. If there were a stranding of whales, dolphins, or other marine mammals along this stretch of coast related to the Navy's use of mid-frequency sonar in southern California, I would likely be among the pool of volunteers called upon to assist in responding to that stranding.

7. Ensuring healthy populations of marine mammals in their natural southern California habitats is incredibly important to me, and helping to keep these animals healthy is among the most meaningful things I do. I find it very rewarding to assist in the rescue of injured marine mammals, but also very painful when I come upon dead or lethally injured marine mammals in the course of my work. My walks along the beaches and my work as a marine mammal rescue volunteer would be immensely less satisfying if I were to encounter fewer healthy marine mammals or greater numbers of marine mammals that could not, after adequate treatment, be released back into the wild. Every time I see a dead marine mammal, it takes an emotional toll. There is

nothing like seeing a dead bottle-nosed dolphin lying on a table in front of you. It is heartbreaking.

8. Because my work with the Wildlife Center is so important to me, in addition to volunteering for rescues I also serve on its Board of Directors, which oversees all aspects of the Center's operations, its Executive Committee, for which I coordinate volunteers, hire staff, fundraise for our marine mammal program, and write grant applications, and its Animal Care Committee, for which I create and amend animal care protocols. If the number of marine mammal strandings we are called upon to respond to were to increase, the Wildlife Center would suffer institutionally and my work helping to support it would become more difficult. The more marine mammal rescues that we have to engage in, the greater our resource needs for staff, supplies, more crates, and possibly another truck for the transport of animals to Long Beach. Additional rescues would require us to devote more time and energy to applying for and securing grants in order to meet these resource needs. In addition, we would have to solicit and train more volunteers. All of this would put additional strain on the Wildlife Center and, in turn, on me, since I am responsible for much of its funding and management.

9. My work for the Wildlife Center as a marine mammal rescue volunteer and member of the Executive and Animal Care Committees and Board of Directors is a staple in my life, and I intend to continue participating in marine mammal rescues and working to help manage the Wildlife Center in the future. I also plan to continue to regularly walk along southern California beaches in

Santa Monica and Malibu and to look for marine wildlife in these areas in the future.

10. As I understand it, the U.S. Navy is planning two years' worth of major training exercises using mid-frequency active sonar systems in and near waters where I walk along the beach, and in and near waters that provide habitat for the marine mammals that I observe and, when necessary, am called upon to help rescue from beaches. My enjoyment of the marine environment is harmed by the failure of the Navy to follow the mandatory procedures established by the National Environmental Policy Act, the Endangered Species Act, and the Coastal Zone Management Act in undertaking these exercises, because the Navy's failure to comply with federal environmental law in its training with sonar makes it more likely that harm will come to the marine life that I enjoy in this area. Harm to dolphins, whales, seals, sea lions, and other marine mammals in these areas from Navy sonar will lessen the satisfaction I feel while walking along beaches and while working as a volunteer for the California Wildlife Center, since it will reduce my chances of observing healthy marine mammals and increase my chances of encountering dead or lethally injured marine mammals. It therefore harms my recreational, personal and aesthetic interests.

11. I believe that the Navy's challenged exercises in Southern California waters have harmed and will continue to harm marine life in the areas where it conducts active sonar testing, and that my own enjoyment and engagement with marine mammals and other marine life has been impaired and will continue to be im-

paired by the Navy's failure to properly consider and mitigate the harm to marine life caused by its exercises.

Executed on June 15, 2007, at Beverly Hills, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ ELIZABETH ORECK
ELIZABETH ORECK

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL.,DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF DANIEL SILVER IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF DANIEL SILVER

I, DANIEL SILVER, declare as follows:

1. I reside at 1422 N. Sweetzer Avenue, Los Angeles, California. I have personal knowledge of the matters set forth herein.

2. I am currently a member of Cetacean Society International ("CSI") and have been for many years. I joined and continue to be a member of CSI because of

my long-standing interest in the health and preservation of marine mammals.

3. I have a Bachelor of Arts from U.C. Berkeley and an M.D. from Columbia University. I am a founder and full-time Executive Director of Endangered Habitats League ("EHL"), a non-profit organization dedicated to the protection of the diverse ecosystems of southern California and to sensitive and sustainable land use for the benefit of all the region's inhabitants. EHL is southern California's only regional conservation group working to protect endangered species by safeguarding the places where they live. EHL's work includes advocating for the protection of endangered marine species, specifically the listed population of steelhead trout (*Oncorhynchus mykiss)* that exists in southern California.

4. Living near the ocean and regularly observing marine wildlife, including marine mammals, is very important to me. Every year during the summer months, I visit Santa Monica Bay beaches two to three times per week, sometimes more. I swim in the water and regularly see dolphins. Occasionally I see harbor seals. I have done this for many years and I intend to continue to do so in the future. Seeing these beautiful animals surviving in their natural habitat brings me great pleasure.

5. Occasionally I have watched gray whales migrating along the coast of California. This migration is one of the most incredible migrations undertaken by any species. Over the next two years, I plan to continue to recreate along the California coast, and intend to take whalewatching trips to waters in and around the northern Channel Islands in order to see whales, including

gray whales. Seeing healthy whales, dolphins, and other marine life along our coast brings me great joy, recreational benefit, professional satisfaction, and aesthetic benefit. I plan to continue to observe and enjoy dolphins, whales, and other marine life in these waters, as the health of these species provides one of the main sources of inspiration for my work.

6. I also have a personal and profession interest in maintaining healthy populations of local, struggling fish species. For example, I have done considerable work over the last five years to protect the ESA-listed species southern steelhead trout (*Oncorhynchus mykiss*), which lives in southern California and which is perpetually fighting for survival. I have actively fought to protect and restore the southern California streams and watersheds that these species spawn from and return to, after a life in the ocean, to lay their eggs. In southern Orange County, I have participated in the San Juan and Trabuco Creeks Steelhead Recovery Watershed Plan, and worked to protect the San Mateo Creek watershed from harmful development that would further erode this species' habitat. In northern San Diego County, I have advocated to protect the San Luis Rey River watershed through local government-sponsored regional conservation programs, and sought to purchase land with trout streams to save it from development. Ensuring the continued existence of these fish is very important to me, and my personal, aesthetic, recreational, and professional interests would all be harmed by injury to these fish or this population. I hate to think that my work to safeguard the river habitats of these fish is being undermined by the Navy's failure to protect the ocean habitats of these same populations.

7. I understand that the U.S. Navy has approved a set of fourteen major training exercises for waters off the southern California coast, including off of Santa Barbara, Santa Monica, Orange County, San Diego County, and the other places where I regularly recreate and where I advocate for the protection of endangered species. I believe that the Navy's use of high-intensity, mid-frequency active sonar in the specific exercises and training activities challenged in this case violates the Coastal Zone Management Act, the National Environmental Policy Act, the Endangered Species Act and the Administrative Procedure Act. I have been and will continue to be harmed by the Navy's conduct of the specific mid-frequency sonar training activities challenged in this case without complying with these laws and without taking appropriate and available measures for mitigating the system's impacts, because the challenged activities have harmed or have the potential to harm marine species along Southern California's coast that I regularly view and on whose behalf I work. In particular, I have been and will continue to be harmed by the set of fourteen major training exercises the Navy has begun and plans to continue to conduct over the next two years on its Southern California ranges and operating areas, all of which have harmed or have the potential to harm California coastal species.

8. The Navy's use of mid-frequency sonar in the exercises challenged in the Complaint without complying with federal law has and will continue to compromise my ability to see dolphins and other marine mammals during my regular visits to Santa Monica beaches and during my upcoming whalewatching in the Channel Islands. In addition, these violations of law make it more

likely that further harm will come to the endangered species of steelhead trout that I have worked so hard to restore and protect. It is very disturbing to me that the Navy would cause all of these creatures unnecessary harm.

Executed on June 8, 2007, at Los Angeles, California.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ DANIEL SILVER, M.D.
DANIEL SILVER

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF WILLIAM ROSSITER IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF WILLIAM ROSSITER

I, WILLIAM ROSSITER, declare as follows:

1. I have personal knowledge of the facts stated herein and, if called upon to testify, could and would give competent testimony thereto.

2. Plaintiff Cetacean Society International (CSI), of which I am President, is an all-volunteer, non-profit membership organization with principle headquarters in Redding, Connecticut. CSI has volunteer representa-

tives in 20 countries and approximately 200 members. CSI supports conservation of, educational outreach on and scientific research for the benefit of whales, dolphins, porpoises, and the marine environment.

3. CSI began in 1975 as the Connecticut Cetacean Society, and has since been represented at almost all major national and international fora concerning whales, dolphins, and porpoises, including the International Whaling Commission and the Convention on International Trade in Endangered Species, and at policy and scientific fora.

4. CSI promotes education and conservation programs, including whale- and dolphin-watching, and non-invasive, benign research, while advocating for the passage and enforcement of laws and treaties to constrain commercial whaling, anthropogenic acoustical and chemical pollution, incidental and directed fisheries interactions, harassment, habitat degradation, and other harmful or destructive human impacts on cetaceans.

5. CSI's goal is to minimize cetacean killing and captures, to maximize human activities that neither harm nor harass, and to enhance public awareness of and concern for cetaceans and the marine environment. Whale-watching and other responsible human interactions with cetaceans are a major focus of CSI and its members worldwide.

6. Due to concerns about ocean noise pollution, CSI became involved in the issue of high-intensity Navy sonar in 1996. Since then, CSI has participated in at least 38 meetings, conferences, and workshops concerning Navy sonar or ocean noise pollution in general; submitted formal comments to the National Marine Fisheries

Service (NMFS) and the Navy during public comment periods relevant to Navy sonar; communicated regularly about the Navy sonar issue with bioacousticians and cetologists; and, since October 1996, informed the public about the issue with updated information in CSI's website and newsletters.

7. Close associations with researchers have convinced me that science is as yet unable to quantify the potential impacts to cetaceans from high-intensity Navy sonar; that the consistent trend from new research indicates more impact, not less; and that the scientific record, as it stands, has not been properly analyzed. CSI and its members have been and will continue to be harmed by the Navy's conduct of the specific mid-frequency sonar training activities alleged in the Complaint in this case without compliance with law (including the Coastal Zone Management Act, the Endangered Species Act, the National Environmental Policy Act, and the Administrative Procedures Act) and without taking appropriate and available measures for mitigating the system's harmful impacts to marine mammals.

Executed on June 6, 2007, at Redding, Connecticut.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ WILLIAM ROSSITER
WILLIAM ROSSITER

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF MELANIE POWERS IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF MELANIE POWERS

I, MELANIE POWERS, declare as follows:

1. I have personal knowledge of the facts stated herein and, if called upon to testify, could and would give competent testimony thereto.

2. I am the Chief Financial Officer for the International Fund for Animal Welfare ("IFAW") and have held this position for five years. Reporting directly to the

Chief Executive Officer of IFAW, I develop and direct the financial activities of the organization.

3. Founded in 1969, IFAW works to improve the welfare of wild and domestic animals throughout the world by reducing commercial exploitation of animals, protecting wildlife habitats, and assisting animals in distress. IFAW seeks to motivate the public to prevent cruelty to animals and to promote animal welfare and conservation policies that advance the well-being of both animals and people.

4. IFAW is a "family" of 11 affiliated legal entities with offices in 15 countries worldwide. The International Fund for Animal Welfare, Inc. ("IFAW US") is a 501(c)(3), tax-exempt organization located in Yarmouth Port, Massachusetts. IFAW US conducts fundraising and programmatic activities in accordance with its global mission within the United States and through its branch offices located in Mexico, China, and Kenya, and through grants to its affiliates. In addition, IFAW US is the world headquarters for all IFAW entities.

5. IFAW has over 2 million members worldwide, over 500,000 of whom reside in the United States.

6. Over the past two decades, IFAW has emerged as one of the world's leading organizations supporting the protection and conservation of whales through research, advocacy and habitat protection. IFAW has played an active part in the meetings of the International Whaling Commission for over twenty years, supporting a range of conservation measures, the most important of which were the moratorium on commercial whaling in 1982 and the creation of the Southern Ocean Sanctuary, which was adopted in 1994. IFAW has contributed to a wide

range of scientific research, and political and legal discussions to secure greater protection for the world's whales through this important body.

7. IFAW scientists and IFAW-funded research programs have made major contributions to whale biology, including the development and application of non-lethal population census methods, population modeling, acoustics, behavior, interactions of whales and fish populations, DNA analysis of whale meat in Japanese markets, and pollutant levels in whales. IFAW has its own research vessel, the Song of the Whale, which is a custom-designed, state-of-the art platform for research, education, and public awareness. The vessel can undertake voyages almost anywhere in the world. In recent years, Song of the Whale has undertaken research into underwater acoustics and the impacts of underwater sound on marine life.

8. Through its work on whale watching and public awareness programs, IFAW builds interest in marine conservation and protection issues among residents of coastal areas in the United States, South America, Russia, Africa, the Caribbean, the South Pacific, and Iceland – where endangered whales feed, breed, and migrate. At the same time, IFAW gives voice to existing global public opinion against commercial whaling and other human threats to whales, including ocean noise.

9. Due to its expertise on whale conservation and animal welfare, and its strong supporter network of more than 2 million citizens worldwide, IFAW was appointed to hold a seat on the U.S. Marine Mammal Commission Advisory Committee on Acoustic Impacts on Marine Mammals. Established in 2003, the Advisory

Committee's mission, in part, was to recommend research and management actions to mitigate potential adverse effects of human-generated noise on marine mammals and other marine life.

10. IFAW advocates for responsible whale watching, benign research, and the adoption and enforcement of laws and treaties to stop commercial whaling and to reduce or eliminate anthropogenic acoustic and chemical pollution, incidental and directed fisheries interactions, harassment, habitat degradation, and other harmful or destructive human interactions with protected and endangered marine mammals worldwide.

11. A major IFAW goal in enhancing the welfare of marine mammals and their habitats is to significantly reduce or eliminate harmful levels and sources of ocean noise in key regions and habitats worldwide. Thus, IFAW works to ensure that appropriate management programs are in place in the U.S. to mitigate the use of technologies and other activities that generate underwater sound that can disturb, injure, or kill whales and other marine life.

Executed on June 12, 2007, at So. Yarmouth, Massachusetts.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ MELANIE POWERS
MELANIE POWERS

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF GINA TRUJILLO IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

DECLARATION OF GINA TRUJILLO

I, GINA TRUJILLO, declare as follows:

1. I have personal knowledge of the facts stated herein and, if called upon to testify, could and would give competent testimony thereto.

2. I am the Director of Member Services and Development for the Natural Resources Defense Council ("NRDC"). I have been the Director of Member Ser-

vices and Development for 2 years. My duties in this position include supervising the maintenance and updating of NRDC's membership database, which is a listing of those persons who are members of NRDC.

3. NRDC is a New York not-for-profit membership corporation, recognized under section 501(c)(3) of the United States Internal Revenue Code. NRDC has offices in Los Angeles, New York, San Francisco and Washington, D.C. NRDC opened its Los Angeles office in 1991.

4. NRDC's certificate of incorporation states that one of NRDC's purposes is "[t]o preserve, protect and defend natural resources, wildlife and the environment against encroachment, misuse and destruction" and "[t]o take whatever legal steps may be appropriate and proper to carry out the foregoing purposes." (Certificate of Incorporation of Natural Resources Defense Council, Inc., at 2 (1970) (a true and correct copy of pertinent parts of NRDC's Certificate of Incorporation is attached as Exhibit "A").)

5. NRDC's membership database is maintained in computer format at Public Interest Data, Inc., 1800 Diagonal Road, suite 400, Alexandria, Virginia, 22314. I and the staff of NRDC's Membership and Public Education work at the NRDC's headquarters located at 40 West 20th Street, New York, NY 10011. The membership database is accessible by computer from the NRDC office.

6. NRDC's by-laws state that: "[u]nless otherwise directed by the Board of Trustees, a person shall become a member . . . by submitting a membership application offered by the Corporation or by making a contri-

bution to the Corporation accompanied by a statement requesting membership in the Corporation." (Amended and Restated By-laws of Natural Resources Defense Council, Inc., at 2 (1993) (a true and correct copy of pertinent parts of NRDC's by-laws is attached as Exhibit "B").)

7. Membership in NRDC is renewed on an annual basis through payment of renewal membership dues. (*Id.*)

8. A typical NRDC membership sign-up form states, "YES, I WANT TO JOIN NRDC. Please take legal action and wage campaigns on my behalf to defend our planet's endangered wildlife, wilderness, and environment." (*NRDC: The Earth's Best Defense* (a true and correct copy of this sign-up form is attached as Exhibit "C").) The membership sign-up form states further that NRDC's work depends in part on our members' "participation in our citizen lawsuits." (*Id.*)

9. Over the years, NRDC has operated a number of campaigns specifically geared to the protection of marine mammals. These efforts have included a campaign to protect the gray whale nursery in Laguna San Ignacio, Mexico and a campaign against the worldwide deployment of Low Frequency Active Sonar by the Navy. The participation and input that we have received from members on these campaigns demonstrates that marine mammal preservation issues are among the most important issues to our members.

10. NRDC also regularly campaigns for the protection of marine species such as fish, sea turtles, and other marine life from threats including overfishing, bottom trawling, marine pollution, and intense underwater

noise. NRDC has published two editions of a report on the harms caused by ocean noise pollution to marine species, the most recent edition published in 2005 and entitled *Sounding the Depths II: The Rising Toll of Sonar, Shipping and Industrial Ocean Noise on Marine Life.*

11. NRDC maintains regular contact with its members, informing them of our progress on myriad environmental issues, including our efforts to protect marine mammals, fish, and other ocean species from high-intensity noise. NRDC members are regularly updated on issues impacting marine mammals, fish, and other ocean species through information available on the NRDC website, annual reports, the quarterly *On Earth* magazine, and other mailings.

12. NRDC has more than 526,778 members nationwide. We have members in all fifty U.S. states and large numbers of members in coastal states, including over 97,746 members in California.

13. For purposes of preparing this declaration, I have reviewed NRDC's membership database to determine how many members have taken action on marine mammals by both making a financial contribution and signing a petition in response to one or more of NRDC's marine mammal campaigns. Based on this search, I have determined that NRDC currently has at least 280,000 members who have made a financial contribution and signed a petition in support of one or more of our marine mammal campaigns.

Executed on June 6, 2007, at New York, New York.

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.

/s/ GINA TRUJILLO
GINA TRUJILLO

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV-05-7513 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFF

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANT

Wednesday, Nov. 14, 2007

DEPOSITION OF RONALD E. TICKLE

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[118]

BY MR. FAYER:

Q Okay. And is the Navy's practice at this time to, on a case-by-case basis, include additional mitigation beyond what is in the NDE for particular exercises?

A Yes, they are permitted. If there is any precedent-setting issues, that we expect anyone making a mitigation measure that could have larger implications than just one exercise, our expectation is that they will coordinate with our office and other parts of the Navy.

Q And that would be the case with any measures that go beyond the NDE?

A I would say any measure that is not specific to the geographic time and location and the specific exercise occurring.

Q Okay. And the concern for that is that if the fleets were to employ it in a particular exercise there may be repercussions beyond that exercise for precedent?

MR. McARDLE: Objection; vague and compound.

THE WITNESS: That is correct.

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UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF DAVID E. BAIN IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

I, DAVID E. BAIN, declare the following:

1. This Declaration is submitted in support of Plaintiffs' motion for a preliminary injunction. The statements contained in this Declaration are true and correct to the best of my knowledge and, in the case of my opinions, I believe them to be true. If called as a witness, I could and would testify competently to the statements contained herein.

2. I am currently a contracting scientist for the National Marine Fisheries Service. I received my B.A.

with majors in Biology and Psychobiology with Physics in 1980 and Ph.D. in Biology in 1989 from the University of California at Santa Cruz. A copy of my curriculum vitae is attached to this Declaration.

3. I have authored over 30 peer-reviewed papers and reports on the behavioral ecology of marine mammals, especially of killer whales (*Orcinus*). A substantial portion of this work has been concerned with audition, sound production, and other aspects of the acoustic ecology of these species. I have conducted studies for the National Marine Mammal Laboratory and other branches of the National Marine Fisheries Service, Minerals Management Service, and U.S. Geological Survey on the impacts of acoustic disturbance on individuals and populations of marine mammals. Reports based on these and other disturbance-related studies have been published in books and peer-reviewed journals and presented at scientific meetings of the International Whaling Commission, the Society for Marine Mammalogy, and the Acoustical Society of America. I have more than twenty-nine years of experience as a research biologist on marine mammals.

4. In preparing this Declaration, I have reviewed relevant parts of the Navy's Environmental Assessment for its JTFEX and COMPTUEX exercises off the California coast, as well as the California Coastal Commission's Revised Staff Recommendation on those exercises. The conclusions I draw and the opinions I express are supported by texts and research that other experts in my field consider reliable.

5. Based on my research, my observations in 2003 of marine mammals exposed to mid-frequency sonar, and my knowledge of the science of acoustic impacts on

marine mammals, I am concerned that the Navy's 14 major exercises individually and collectively present a significant risk to marine mammals off California.

6. The impact threshold that has been recommended by the Coastal Commission's staff, and adopted by the Commission earlier this year, may not be sufficiently conservative for all species, given what we know about acoustic impacts on marine mammals; but the Navy's threshold clearly understates the potential impact of its exercises. For example, there are 20 years of data on acoustic disturbance in killer whales, making it a model, or indicator, for types of impacts associated with relatively low levels of anthropogenic sound. Strong behavioral disruptions including displacement from habitat have been demonstrated in killer whales at exposure levels below 135 decibels (Trites et al. 1995; Bain 1995; Morton and Symonds 2002; Williams et al. 2002a),[1] which would occur many miles from a mid-frequency sonar source; and minor behavioral responses have been observed at levels as low as 105-110 decibels (Kruse 1991; Williams et al. 2002b; Smith and Bain 2002,

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[1] A.W. Trites, W. Hochachka, and S. K. Carter (1995), "Killer whales and vessel activity in Robson Bight from 1991 to 1994," report to BC Ministry of Environment, Land and Parks; D.E. Bain (1995), "The use of sound to guide killer whales (*Orcinus orca*) entrapped in Barnes Lake, Alaska, to open water," poster presented to the Society for Marine Mammalogy Conference, Orlando, FL; A.B. Morton and H. K. Symonds (2002), "Displacement of *Orcinus orca* (L.) by high amplitude sound in British Columbia, Canada," *ICES J. Mar. Sci.* 59: 71-80; R. Williams, D.E. Bain, J.K.B. Ford, and A.W. Trites (2002a), "Behavioural responses of male killer whales to a "leapfrogging" vessel," *J. Cetacean Res. Manage.* 4(3): 305-310. Decibel levels refer here to sound pressure levels RMS in reference to 1 micropascal.

Bain et al. 2002, 2006).[2] As correctly noted in the Coastal Commission's Revised Staff Recommendation, other species such as harbor porpoises (e.g., Kastelein et al. 1997, 2001)[3] may be even more susceptible to mid-frequency noise. It is evident from a range of data that the high-intensity, mid-frequency sonar systems used by the Navy could seriously impact marine mammals over very considerable distances, and at exposure levels that the Navy's analysis does not account for.

7. My concern about mid-frequency sonar is borne out by my own experience off Washington State, where,

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[2] S. Kruse (1991), "The interactions between killer whales and boats in Johnstone Strait, B.C.," pp. 149-159 in K. Pryor and K. S. Norris (eds.), *Dolphin Societies: Discoveries and Puzzles*, UC Press, Berkeley; R. Williams, D.E. Bain, and A. Trites (2002b), "Behavioural responses of killer whales (*Orcinus orca*) to whale-watching boats: opportunistic observations and experimental approaches," *J. Zool. (London)* 256: 255-270; J.C. Smith and D.E. Bain (2002), "Theodolite study of the effects of vessel traffic on killer whales (*Orcinus orca*) in the near-shore waters of Washington State 2001: Summary report," submitted to Fourth International Orca Symposium and Workshop, Chizé, France; D.E. Bain, R. Williams, and A.W. Trites (2002), "A model linking energetic effects of whale watching to killer whale (*Orcinus orca*) population dynamics," paper presented to the International Whaling Commission Scientific Committee, Shimonoseki, Japan; D.E. Bain, J.C. Smith, R. Williams, and D. Lusseau (2006), "Effects of vessels on behavior of southern resident killer whales (*Orcinus* spp.)," NMFS Contract Report No. AB133F03SE0959 and AB133F04CN0040.

[3] R.A. Kastelein, D. de Haan, A.D. Goodson, C. Staal, and N. Vaughan (1997), "The effects of various sounds on a harbour porpoise *Phocoena phocoena*," pp. 367-383 in A.J. Read, P.R. Wiepkema, and P.E. Nachtigall, eds., *The Biology of the Harbour Porpoise*, De Spil: Woerden, The Netherlands; R.A. Kastelein, D. de Haan, N. Vaughan, C. Staal, and N.M Schooneman (2001), "The influence of three acoustic alarms on the behaviour of harbour porpoises (*Phocoena phocoena*) in a floating pen," *Mar. Environ. Res.* 52: 351-371.

in 2003, I observed dramatic behavior in three different species during Navy training.

8. On May 5, 2003, I tracked a pod of southern resident killer whales (now listed as an endangered population) as a single naval vessel transited through Puget Sound, Juan de Fuca Strait, and Haro Strait, Washington, with its mid-frequency sonar active. When the vessel was 47 km away, I observed minor behavioral changes, comparable to the stress response seen in the presence of whale-watching boats. When it was 22 km away, I observed a change in the whales' travel route that precluded them from reaching a prime foraging area—a significant disruption of feeding behavior. When it was 13 km away, the whales sought refuge in a bay where San Juan Island blocked some of the noise from reaching them; and there they remained until the vessel passed, when the pod split into two groups, one of which traveled at high speed in the opposite direction.

9. In other words, at 47 km there may have been a stress response, at 22 km there was a significant disruption of feeding behavior (constituting Level B harassment under the Marine Mammal Protection Act), at 13 km there was a behavioral change that may be analogous to beaked whales remaining submerged, and after the vessel passed, there was a behavioral change analogous to a beaked whale rapidly surfacing (a response that might have led to injury in other species).

10. On the same day, I also observed a minke whale porpoising through the water—a truly extraordinary behavior for this species—in what appeared to be a flight response from the sonar vessel while it was more than 3 km away. This was a significant behavioral reaction that could have resulted in a stranding had the bot-

tom topography been similar to that where a minke whale stranded during a previous sonar exercise in the Bahamas.

11. Ten days earlier, on April 25, 2003, I observed Dall's porpoises reacting to another Navy sonar exercise in Juan de Fuca Strait. The porpoises fled the naval vessel to a distance of approximately 40 km.

12. I have been studying the behavior of killer whales since 1978; my Ph.D. work focused on killer whales, and I have been engaged in research on the effects of noise on marine mammals, in addition to work on killer whales, since 1983. In my experience, the behaviors I witnessed in these species were extraordinary, and the behavior of the minke whale, when considered as part of a natural repertoire, was extremely rare. All three sets of behaviors were consistent with what would be expected in the presence of very loud noise.

13. I am concerned both about the acute effects of mid-frequency sonar on marine species, which include behavioral disruption, displacement, injury, and mortality, and about cumulative effects on critical behaviors such as foraging. As we have seen from our study of killer whales in the Northeast Pacific, the additional expenditures of energy that changes in swimming patterns and increases in other behaviors demand, combined with the reductions in foraging that result from masking and the exclusion of animals from feeding habitat, can have a severe effect on energy balance (Bain et al. 2002). Indeed, such energetic consequences can have cumulative effects that result in increased mortality and/or reduced fecundity (birth rates) for the population

as a whole (Bain et al. *in prep*).[4] While large whales can go extended periods of time without eating, small cetaceans such as harbor porpoise, along with individuals in poor condition, face a risk of death if they are unable to feed for periods as short as 48-72 hours (personal observation). Stress responses, which have been documented in marine mammals in response to noise (Romano et al. 2004),[5] have been shown in terrestrial animals to result over time in physiological damage, susceptibility to illness, termination of pregnancy, and injury in aggressive interactions.

14. Even apart from strandings and other acute responses, the cumulative effects of 14 major exercises—particularly when considered alongside future events and other naval exercises in the same areas—may be highly significant for some California populations. The Navy's failure to properly evaluate cumulative effects is a fundamental defect of its Environmental Assessment.

15. For certain California or west-coast stocks of marine mammals, the loss of a small number of individuals, whether through death or injury or impaired function, would pose a threat to the population's continued survival. A number of endangered baleen whale species, including one of the world's major populations of blue whales, are known to occur in the exercise area. Other

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[4] D.E. Bain, R. Williams, and A.W. Trites (in prep.), "Potential effects of whale watching on killer whale (*Orcinus orca*) population dynamics: Insights from three models."

[5] T.A. Romano, M.J. Keogh, C. Kelly, P. Feng, L. Berk, C.E. Schlundt, D.A. Carder, and J.J. Finneran (2004), "Anthropogenic sound and marine mammal health: Measures of the nervous and immune systems before and after intense sound exposure," *Can J. Fish. Aquat. Sci.* 61: 1124-1134.

vulnerable populations include the short-finned pilot whale (for which, according to the most recent NOAA stock assessments, the loss of 1.2 individuals would compromise survival), inshore bottlenose dolphin (2.4 individuals), transient killer whale (3.1 individuals), and minke whale (5.8 individuals). These species all have large ranges, so the number of individuals passing through the project area may be large compared to the number present at a given time. That is, while a given exercise may adversely affect a small proportion of the population, the cumulative effects from a series of exercises may affect a high proportion of individuals in a stock. Similarly, exercises carried out at a time of year when a species is present in relatively high numbers may result in greater impact than expected based on average abundance. In addition, baleen whales and killer whales are known to be vulnerable to ship strike (Nowacek et al. 2004; Carretta et al. 2007; Federal Register 2007),[6] and bottlenose dolphins to small boat strike (Wells and Scott 1997),[7] the risk of which may increase with sonar exposure.

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[6] D.P. Nowacek, M.P. Johnson, and P.L. Tyack (2004), "North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli," *Proceedings of the Royal Society of London, Part B: Biological Sciences* 271: 227-231; J.V. Carretta, K.A. Forney, M.M. Muto, J. Barlow, J. Baker, B. Hanson, and M.S. Lowry (2007), *U.S. Pacific Marine Mammal Stock Assessments: 2006*, NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-398, La Jolla, Cal.: NMFS Southwest Fisheries Science Center, 312 pp.; Federal Register (2007), "Protective regulations for killer whales in the Northwest Region under the Endangered Species Act and Marine Mammal Protection Act," *Federal Register* 72: 13464-13467.

[7] R.S. Wells and M.D. Scott (1997), "Seasonal incidence of boat strikes on bottlenose dolphins near Sarasota, FL," *Marine Mammal Science* 13:475-480.

16. The Navy believes that its model take estimates are overestimates because mitigation and monitoring will result in power-down or shut down in time to "minimize or avoid the potential for exposure." However, the distances at which marine mammals responded to Navy sonar in Haro Strait, and the sound pressure levels at which impacts have been demonstrated from a variety of acoustic sources, indicates monitoring will be inadequate to prevent behaviorally mediated impacts.

17. In past assessments, the Navy and NMFS have suggested that impacts would be reduced because animals would move away from the sonar field. While marine mammals have been observed to move away in some cases such as those described above, the experience with use of acoustic deterrents to limit fishery interactions indicates that marine mammals may not move away, and will expose themselves to potentially harmful levels of sound in order to remain in a biologically productive area (Reeves et al. 1996).[8] Also, as I observed in killer whales exposed to mid-frequency sonar in 2003, even motivated animals can have difficulty escaping a complex sound field, such as may occur in waters with complex bathymetry or during activities that use multiple acoustic sources. Further, sonar vessels can travel at greater speeds than marine mammals can sustain, as evidenced by the sonar vessel overtaking the fleeing minke whale, so flight responses may not be successful in reducing exposure. Significant effects may be expected whether mammals remain where critical behav-

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[8] R.R. Reeves, R.J. Hofman, G.K. Silber, and D. Wilkinson (1996), "Acoustic deterrence of harmful marine mammal-fishery interactions: Proceedings of a Workshop held in Seattle, WA, USA, 20-22 March 1996," NOAA Tech. Memo NMFS-OPR-10, 68 pp.

iors are disrupted or they are displaced from preferred habitat, particularly when these effects are experienced repeatedly or for an extended period of time.

18. In modeling impacts from its major exercises, the Navy appears to have ignored noise sources with a source level below 205 dB re 1 μPa because the noise would attenuate below the behavioral disturbance threshold at a distance of about 100 m. However, Olesiuk et al. (2002)[9] found that 95% of harbor porpoises were displaced from the area within 3km of an acoustic harassment device with a source level of 195 dB, indicating, again, that the Navy has incorrectly calculated the behavioral disturbance threshold. As a result, it has failed to consider a number of noise sources which may cause significant effects, particularly in combination with other sources within a single sound field.

19. Simply put, mitigation measures should be based on levels of sound that could cause significant behavioral change. Major behavioral responses such as sheltering near the ocean bottom may lead to the bends in deep-diving species (Fernandez et al. 2005);[10] flight responses may lead to stranding (National Oceanic and Atmospheric Administration and U.S. Department of the

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[9] P.F. Olesiuk, L.M. Nichol, M.J. Sowden, and J.K.B. Ford. (2002). "Effect of the sound generated by an acoustic harassment device on the relative abundance and distribution of harbour porpoises (*Phocoena phocoena*) in Retreat Passage, British Columbia." *Marine Mammal Science* 18:843-862.

[10] A. Fernandez, J.F. Edwards, F. Rodriguez, A. Espinosa de los Monteros, P. Herraez, P. Castro, J.R. Jaber, V. Martin, and M. Arbelo (2005). "'Gas and fat embolic syndrome' involving a mass stranding of beaked whales (Family *Ziphiidae*) exposed to anthropogenic sonar signals." *Veterinary Pathology* 42: 446-457.

Navy 2001),[11] physical exhaustion and increased predation risk during recovery (Williams and Thorne 1996),[12] or isolation of individuals from the group they depend upon for survival; and minor behavioral responses may signal the occurrence of a stress reaction.

20. The Navy's safety zone should be extended, as the Coastal Commission has recommended; in the end, however, monitoring can mitigate harm to marine mammals over only a small portion of the impact area. Since animals over the horizon would be affected, visual detection from the sonar vessel alone would be inadequate to prevent exposure; infrared sensors have small fields of view with sufficient resolution to detect marine mammals, severely limiting their effectiveness as a mitigation measure at night; and passive acoustic detection is limited to individuals that are vocalizing, although, as was observed during the SHIPS seismic research survey in 1998 (personal observation), some marine mammals respond to intense noise by falling silent. Thus, a critical approach to preventing serious injury or death would be to minimize exposures in the first instance by avoiding areas with higher densities of marine mammals, particularly of endangered or otherwise vulnerable populations; and by reducing power at the sound source to substantially reduce the size of the impact area, especially in low-visibility and surface-ducting conditions.

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[11] National Oceanographic and Atmospheric Administration and U.S. Department of the Navy (2001), "Joint Interim Report: Bahamas Marine Mammal Stranding Event of 15-16 March 2000," Washington: U.S. Department of Commerce, 59pp.

[12] E.S. Williams and E.T. Thorne (1996), "Exertional myopathy (capture myopathy)," pp. 181-193 in A. Fairbrother, L.N. Locke, and G.L. Hoff, eds., *Non-Infectious Diseases of Wildlife*, Ames, Iowa: Iowa State University Press.

21. In addition, it would be advisable to deploy trained observers on all vessels, not only those operating sonar, which would allow sighting of some marine mammals that are close enough to be affected by noise, but too far away to be seen from source-based observers. Experimental techniques, such as radar modified to better detect marine mammals, could be employed to increase the likelihood of detection. These measures, and the recommendations made by the Coastal Commission, would help reduce impacts to marine mammals from the Navy's major exercises in the region.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed this 1st day of May, 2007.

/s/ DAVID E. BAIN
DAVID E. BAIN

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

SUPPLEMENTAL DECLARATION OF DAVID E. BAIN

I, DAVID E. BAIN, declare the following:

1. This Declaration is submitted in support of Plaintiffs' request for effective mitigation of mid-frequency sonar exercises in Southern California. The statements contained in this Declaration are true and correct to the best of my knowledge and, in the case of my opinions, I believe them to be true. If called as a witness, I could and would testify competently to the statements contained herein.

* * * * *

16. While detection of marine mammals prior to potential exposure to harmful levels of noise has value, it also has limitations. Detection methods available include visual observation, infrared imaging, passive and active sonar, and radar. The great distances at which marine mammals responded to Navy sonar in Haro

Strait suggest the monitoring the Navy proposes, and likely any form of monitoring using existing technology, will be inadequate to prevent many direct and behaviorally-mediated impacts.

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18. Forney and Barlow (1998)[8] reviewed marine mammal sighting efficiencies of well-rested, trained observers working in pairs on vessels optimized for sighting marine mammals. They found sighting efficiencies were limited, even under ideal conditions, and deteriorated further with wind, glare, fog, precipitation, etc. Sighting efficiencies were much lower for marine mammals 1 km or more from the track line than for marine mammals directly in front of the vessel. The performance of trainees, even with supervision, would be expected to be lower. Similarly, the performance of bridge officers with duties other than sighting marine mammals would be expected to be lower. Sighting efficiencies from planes was even lower than from vessels.

19. Since animals over the horizon would be affected, visual detection from the sonar vessel alone would be inadequate to prevent exposure. It would be advisable to deploy trained observers on all vessels, not only those operating sonar, which would allow sighting of some marine mammals that are close enough to be affected by noise, but too far away to be seen from source-based observers.

20. Even with use of night vision gear, sighting efficiency at night is likely to be far lower than during the

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[8] K.A. Forney and J. Barlow (1998), "Seasonal patterns in the abundance and distribution of California cetaceans, 1991-1992," *Marine Mammal Science* 14(3): 460-489.

day due to limited fields of view and/or resolution of night vision gear. Infrared sensors have small fields of view when used with sufficient magnification to detect marine mammals, severely limiting their effectiveness as a mitigation measure at night. Minimizing operations at night and when visibility is limited (e.g., in high winds and fog) would reduce unplanned impacts. Further, powering down sonar when visibility is limited would reduce the area exposed to potentially harmful levels of noise in zones where monitoring is not effective.

21. Passive acoustic detection is limited to individuals that are vocalizing, and limited further to animals with vocal patterns that are recognized.

22. Using sonar to detect marine mammals raises the same concerns as sonar use in general.

23. Experimental techniques, such as radar modified to better detect marine mammals, could be employed to increase the likelihood of detection.

24. The difference in received level between surface ducting-present and surfacing ducting-absent conditions increases with distance. While the difference in received levels may be small at short ranges such as 200 yards, at the far greater distances at which mid-frequency sonar still poses a risk of injury to marine mammals, the difference in received level may become quite large. (Note that the behavioral changes observed in Haro Strait many kilometers from the Shoup described above have been linked to injury in other geographic contexts and with other species.) That is, surface ducting can significantly extend the range at which received levels retain the capacity to cause injury, and this should be offset by powering down.

25. Some species may remain submerged for over an hour at a time. Pre-exercise monitoring protocols recognizing this would need to be employed to prevent unintended exposures.

26. These measures and those discussed above would help reduce impacts to marine mammals from the Navy's major exercises in the region. However, they would not be sufficient to completely eliminate them.

27. Marine mammals tend to occur in areas of high productivity. Productivity tends to be high in areas where water masses mix. Examples include seamounts and canyons, where bottom water is forced to move vertically, boundaries between currents, and areas where upwelling is driven by wind. This increased productivity leads to increased biodiversity, including the presence of a variety of marine mammals. Some species associated with seamounts, such as sperm and beaked whales, are especially vulnerable to the effects of noise.

28. In the end, monitoring can mitigate harm to marine mammals over only a small portion of the impact area. Since animals over the horizon would be affected, visual detection from the sonar vessel alone would be inadequate to prevent exposure; and passive acoustic detection is limited to individuals that are vocalizing, although, as was observed during the SHIPS seismic research survey in 1998 (personal observation), some marine mammals respond to intense noise by falling silent.

29. Thus, an important approach to preventing serious injury or death would be to minimize exposures in the first instance by avoiding areas of higher densities of marine mammals and by reducing power at the sound source, which would substantially reduce the size of the impact area.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed this 13th day of December, 2007.

/s/ DAVID E. BAIN
DAVID E. BAIN

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. TBD

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL, PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL, DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF ROBIN WILLIAM BAIRD

I, ROBIN WILLIAM BAIRD, declare the following:

1. This Declaration is submitted in reference to Plaintiffs' motion for a preliminary injunction. The statements contained in this Declaration are true and correct to the best of my knowledge. If called as a witness, I could and would testify competently to the statements contained herein.

2. I am a Biologist with Cascadia Research, a non-profit research organization that specializes in the study of Pacific populations of cetaceans, and an Affiliate Assistant Professor at the University of Washington. Before working at Cascadia, I served as a Contract Biologist for the National Marine Fisheries Service (NMFS),

for which I studied mid-Atlantic bottlenose dolphins, and as a consultant for its Southwest Fisheries Science Center. In total, I have authored or co-authored more than 50 peer-reviewed publications and more than 50 technical reports and other papers. I received my Ph.D. in Biology from Simon Fraser University in 1994. My curriculum vitae and list of publications are attached as Exhibit A.

3. In recent years, my research has included a study of diving behavior in two species of beaked whales in Hawaii, Cuvier's (*Ziphius cavirostris*) and Blainville's (*Mesoplodon densirostris*) beaked whales. Cuvier's beaked whales occur within the Navy's Southern California Operations Area, as well as several other species of *Mesoplodon*. This study (Baird et al. 2006)[1] provides insight into potential mechanisms for beaked whale injury in association with high-intensity sonar. In 2004, I participated in a scientific workshop organized by the U.S. Marine Mammal Commission to assess the causes of beaked whale strandings in relation to anthropogenic sound (Cox et al. 2006).[2]

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[1] R.W. Baird, D.L. Webster, D.J. McSweeney, A.D. Ligon, G.S. Schorr, and J. Barlow (2006), "Diving behavior of Cuvier's (*Ziphius cavirostris*) and Blainville's beaked whales (*Mesoplodon densirostris*) in Hawaii," *Canadian J. of Zoology* 84: 1120-1128.

[2] T.M. Cox, T.J. Ragen, A.J. Read, E. Vos, R.W. Baird, K. Balcomb, J. Barlow, J. Caldwell, T. Cranford, L. Crum, A. D'Amico, G. D'Spain, A. Fernández, J. Finneran, R. Gentry, W. Gerth, F. Gulland, J. Hildebrand, D. Houser, T. Hullar, P.D. Jepson, D. Ketten, C.D. Macleod, P. Miller, S. Moore, D.C. Mountain, D. Palka, P. Ponganis, S. Rommel, T. Rowles, B. Taylor, P. Tyack, D. Wartzok, R. Gisiner, J. Mead, and L. Benner (2006), "Understanding the impacts of anthropogenic sound on beaked whales," *J. Cetacean Research & Management* 7: 177-187.

4. In preparing this Declaration, I have reviewed relevant portions of the Navy's Environmental Assessment for Joint Task Force Exercises and Composite Training Unit Exercises as well as its Supplemental Programmatic Environmental Assessment for RIMPAC 2006, which provides additional information on the Navy's analysis of marine mammal "takes." The conclusions I draw and opinions I express are supported by texts and research that other experts in my field would consider reliable.

5. It is my opinion, based on my years of field work and my knowledge of the relevant literature, that the Navy's proposed mitigation for the JTFEX and COMPTUEX exercises would be ineffective at both reducing and detecting impacts on marine mammals, particularly on deep-diving cetaceans such as beaked whales.

6. As per the environmental assessment, the Navy's major exercises in the Southern California operations area would require visual monitoring of marine mammals by two ship-based "lookouts." According to the best available estimate (Barlow and Gisiner 2006),[3] fewer than 2% of beaked whales would likely be detected under such circumstances even when directly on the ship's trackline, and the detection rate would approach zero for beaked whales occurring 1 kilometer away. I believe this estimate would easily hold for beaked whales in the Navy's Southern California range, particularly given the speed at which Navy vessels may travel.

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[3] J. Barlow and R. Gisiner, "Mitigating, monitoring, and assessing the effects of anthropogenic sound on beaked whales," *J. Cetacean Research & Management* 7(3): 239-249.

7. The limited aerial monitoring proposed for the exercises, which would involve non-dedicated aircraft, has only limited value for long-diving cetaceans. Several species of odontocetes in the area of interest tend to dive for extended periods and therefore would have a very low probability of being detected even through dedicated aerial overflights. For example, Blainville's beaked whales and Cuvier's beaked whales have been documented diving for periods of up to 83 and 87 minutes in Hawaii, respectively (Baird et al. 2005; Baird unpublished),[4] and are known to regularly dive for periods of 50-60 minutes. Short-finned pilot whales (*Globicephala macrorhynchus*) and dwarf and pygmy sperm whales (*Kogia spp.*) are also known to dive for extended periods. Furthermore, Barlow and Gisiner (2006) note that "the effective search width [for beaked whales] is typically only 250-500 m (on each side of the aircraft) for aerial observers searching by naked eye in good to excellent sighting conditions." Thus the likelihood of aerial reconnaissance detecting any of these species is extremely low, even in ideal sea conditions.

8. If severe impacts like strandings do occur during the exercises, the likelihood of detecting them are small unless the animals move into an area under direct monitoring or into an area with regular access by people, and many of the islands off Southern California are sparsely populated or have relatively inaccessible shorelines.

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[4] R.W. Baird, D.L. Webster, D.J. McSweeney, A.D. Ligon, and G.S. Schorr (2005), "Diving behavior and ecology of Cuvier's (*Ziphius cavirostris*) and Blainville's beaked whales (*Mesoplodon densirostris*) in Hawai'i," report prepared under Order No. AB133F04-RQ-0928 for NMFS Southwest Fisheries Science Center.

9. In my expert opinion, there is simply no scientific basis for the claim that the proposed monitoring measures can effectively reduce impacts on cetaceans or detect those impacts once they occur. Indeed, all of the evidence of which I am aware indicates the opposite, particularly where deep-diving species are concerned. This conclusion is also true of previous COMPTUEX and JTFEX exercises, for which, to my knowledge, even less monitoring was provided. For those exercises, as well as for RIMPAC 2006, levels of monitoring were insufficient to detect impacts, particularly on beaked whales, or to determine whether long-term, population impacts have occurred.

10. Given the insufficiency of the proposed monitoring and mitigation measures, I am concerned about the exercises' potential impacts on beaked whales.

11. Some species of beaked whales, including Cuvier's and Blainville's beaked whales, seem particularly vulnerable to injury and strandings in association with high-intensity sonar. In several cases, tissue damage has appeared to occur at significantly lower received sound levels than those thought to cause direct physical harm. It is likely that these species experience physical injury at least in part as a behavioral reaction to the sound (Cox et al. 2006; Baird et al. 2006). Our recent work on beaked whale diving patterns is consistent with the idea that beaked whales are regularly pushing their physiological limits and thus may be more at risk from surfacing excessively fast (Baird et al. 2006). Such impacts would not be prevented through the monitoring and mitigation measures.

12. As many as seven beaked whale species, Baird's (*Berardius bairdii*), Blainville's, Cuvier's, ginkgo-

toothed (*Mesoplodon ginkgodens*), Hubb's (*Mesoplodon carlhubbsi*), Perrin's (*Mesoplodon perrini*), and pygmy (*Mesoplodon peruvianus*) beaked whales, may occur within the Navy's exercise area. For one of these species, Perrin's beaked whale, the area running from San Diego to Monterey represents the entirety of its known range (Dalebout et al. 2002).[5] For this reason, and for their high biodiversity of beaked whale species, MacLeod and Mitchell (2006) have identified both the California shelf margins and the eastern tropical Pacific, both of which are occupied by the Navy's operations area, as among the world's 23 known "key areas" for beaked whales.[6]

13. Additional mitigation measures are likely to reduce the number of animals taken during the Navy's COMPTUEX and JTFEX exercises. For example, if one purpose of mitigation is to reduce the likelihood of exposure of species that may associate with steeply sloping areas (e.g., Baird's beaked whales, short-finned pilot whales), or areas of high productivity, sonar use should be excluded from areas with seamounts.

14. For all these reasons, I believe that the monitoring and mitigation adopted by the Navy is insufficient to detect, much less prevent, marine mammal injury and mortality, particularly of beaked whales species.

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[5] M.L. Dalebout, J.G. Mead, C.S. Baker, A.N. Baker, and A.L. Van Helden (2002), "A new species of beaked whale *Mesoplodon perrini* sp. N. (Cetacea: Ziphiidae) discovered through phylogenetic analyses of mitochondrial DNA sequences," *Marine Mammal Science* 18:577-608.

[6] C.D. MacLeod and G. Mitchell (2006), "Known key areas for beaked whales around the world," *J. Cetacean Management & Research* 7(3): 309-322.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed this 15th day of March 2007.

/s/ ROBIN WILLIAM BAIRD
ROBIN WILLIAM BAIRD

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

SUPPLEMENTAL DECLARATION OF ROBIN WILLIAM BAIRD

I, ROBIN WILLIAM BAIRD, declare the following:

1. This Declaration is submitted in support of Plaintiffs' request for effective mitigation of mid-frequency sonar exercises in Southern California. The statements contained in this Declaration are true and correct to the best of my knowledge and, in the case of my opinions, I believe them to be true. If called as a witness, I could and would testify competently to the statements contained herein.

* * * * *

6. Additional mitigation measures are likely to reduce the number of animals taken during the Navy's COMPTUEX and JTFEX exercises. For example, passive acoustic monitoring using bottom-mounted hydrophones within the SOCAL operating area (in particular,

on the instrumented SOAR range west of San Clemente Island) has recently been successfully used to detect and locate beaked whales. While effective use of this system requires experienced operators, monitoring for beaked whales using this system prior to exercises, as well as during exercises, may allow for real-time avoidance of areas on the SOAR range where beaked whales are acoustically detected.

* * * * *

8. Extensive vessel-based surveys by the National Marine Fisheries Service and other research organizations have documented high densities of a number of species of cetaceans within the Catalina Basin (Carretta et al. 2007)[5]. As noted in Appendix A of the COMPTUEX/JTFEX EA/OEA, densities of cetaceans within the SOCAL range generally decrease with increasing depth, with much lower densities in water depths > 2,000 m than in shallower waters and lowest densities in water depths > 4000 m. Given the ineffectiveness of vessel-based visual and passive acoustic detections for mitigating impacts, the most effective way at reducing impacts of mid-frequency sonar on cetaceans would be to avoid areas with high densities of cetaceans, such as areas with depths < 2,000 m and the Catalina Basin.

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[5] J.V. Carretta, K.A. Forney, M.M. Muto, J. Barlow, J. Baker, B. Hanson, and M.S. Lowry (2007) "U.S. Pacific marine mammal stock assessments: 2006" NOAA Technical Memorandum NOAA-TM-NMFS-SWFSC-398.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed this 14th day of December, 2007.

/s/ ROBIN WILLIAM BAIRD
ROBIN WILLIAM BAIRD

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Hearing Date: July 23, 2007
Time: 10:00 a.m.

Hon. Florence-Marie Cooper
U.S. District Judge

DECLARATION OF CONRAD ERKELENS IN SUPPORT OF DEFENDANTS' OPPOSITION TO PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

I, CONRAD ERKELENS, do hereby declare as follows:

I. BACKGROUND

1. I was an Environmental Protection Specialist and the Natural and Cultural Resources Manager for the Commander, U.S. Pacific Fleet, located at Pearl Harbor,

Hawaii. The U.S. Pacific Fleet is primarily a force provider, but five numbered fleet commanders and operational commanders report directly to U.S. Pacific Fleet. The two numbered fleets include Commander, Third Fleet, operating from San Diego, California with ships operating primarily in the eastern Pacific, and Commander Seventh Fleet, operating from Yokosuka, Japan with ships operating primarily in the western Pacific. The operational commanders include Commander, Task Force 12, which conducts anti-submarine warfare operations theater-wide, Commander Task Force 14, which conducts submarine operations throughout the U.S. Pacific Fleet area of responsibility[1] and Commander Maritime Defense Zone Pacific, which is primarily responsible for harbor defense and port security for the U.S. Pacific Command and U.S. Central Commands. I held this position from September 1998 to June 2007. I currently work for KAYA, Associates, Inc. in Huntsville, Alabama as a Senior Scientist.

2. While at U.S. Pacific Fleet, I managed the environmental compliance and conservation programs (natural and cultural resources) for Navy operations on behalf of the Commander, U.S. Pacific Fleet. This involved management of documents prepared pursuant to NEPA and other federal environmental laws. I participated in environmental planning for operations and major exercises for my eight years of government service. I reviewed and was involved in discussions of the science and meth-

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[1] The U.S. Navy's U.S. Pacific Fleet area of responsibility covers more than 50 percent of the earth's surface, encompassing just over 100 million square miles. Each day, Pacific Fleet ships are at sea in the Pacific, Indian, and Arctic Oceans, from the west coast of the U.S. to the Arabian Gulf.

odology for analyzing impacts of sonar on marine mammals from Navy operations during this same timeframe.

3. I graduated from the University of Hawaii in 1989, with a Bachelor of Arts degree in anthropology. In 1993, I earned a Master of Arts from the University of Hawaii in anthropology. The anthropology curriculum at the University of Hawaii focused on data analysis and scientific methodology and research design.

4. I have read the plaintiff's complaint, motion for preliminary injunction and associated exhibits in the case of *Natural Resource Defense Council v. Winter*, Case No. SACV 07-0335 FMC pertaining to allegations of the Navy not being in compliance with the Marine Mammal Protection Act (MMPA), Coastal Zone Management Act (CZMA), National Environmental Policy Act (NEPA), and the Endangered Species Act (ESA) regarding the Environmental Assessment/Overseas Environmental Assessment (EA/OEA) for the Joint Task Force Exercises (JTFEX) and Composite Training Unit Exercises (COMTPUEX) in the Southern California Operating Area. This declaration addresses some of the issues surrounding Navy's responses to the allegations contained within that complaint and motion for preliminary injunction.

5. During my eight years of government service at U.S. Pacific Fleet, to understand the tactical use of sonar and the exercises during which training takes place, I reviewed Tactical Training Manuals and Navy Warfare Publications for torpedoes, submarine, and surface ship anti-submarine warfare. I received training in the tactical use of sonar from Fleet Antisubmarine Warfare Afloat Training Group Trainers. I am familiar with the history and development of the mid-frequency sonar

(MFA) systems and have spoken directly with scientists who developed these systems and reviewed articles discussing the development of active sonar systems. I attended training designed for U.S. Navy surface warfare officers who command a squadron of surface warfare ships to further my understanding of sonar systems, their use and deployment. I managed complex sonar training event reconstructions involving the review of various sonar and deck logs along with associated acoustic modeling results for Navy events including the 2003 USS SHOUP incident in the Pacific Northwest and the 2004 Rim-of-the-Pacific exercise in Hawaii. I am familiar with reconstructions completed for incidents in the Atlantic including the 2000 Bahamas incident and 2005 North Carolina strandings. Also, during my tenure, I was involved in the drafting of the RIMPAC 2006 After Action Report which detailed the effectiveness of mitigation measures imposed for that exercise prior to the Navy's adoption of standard mitigation measures detailed in the two-year National Defense Exemption under MMPA on 23 January 2007.

6. I am familiar with the literature involving acoustic effects on marine mammals, studies of marine mammal populations, stranding incidents, and general information regarding marine resources in the SOCAL operating areas described in the EA.

7. In the course of my duties as an Environmental Protection Specialist, I provided assistance with the preparation of environmental compliance documents for various fleet activities including the preparation of the Environmental Assessment/Overseas Environmental Assessment (EA/OEA) for the Joint Task Force Exercises (JTFEX) and Composite Training Unit Exercises

(COMTPUEX) in the Southern California Operating Area. The war-fighting readiness mission of Commander, U.S. Pacific Fleet is to provide fully trained U.S. combat ready naval forces for deployment overseas. In furtherance of this mandate and in support of the Navy's Fleet Readiness Training Plan, the U.S. THIRD Fleet (headquartered at Naval Base Point Loma) regularly conducts COMPTUEX and JTFEX training exercises involving military installations and operating areas in the southwestern United States and offshore of Southern California. These complex, deployment-preparation exercises require use of diverse acoustic and bathymetric conditions for anti-submarine warfare so that strike groups can develop and demonstrate a wide variety of warfare skills during realistic and complex training scenarios. These scenarios may vary greatly depending on the types of situations strike groups may expect to encounter, but all require access to diverse land, sea, and undersea training environments.

II. RIMPAC 2006 AFTER ACTION REPORT

8. Plaintiffs, in more than one place in their motion for a preliminary injunction, claim that Navy has dismissed potential mitigation measures without analysis. This is completely false. Prior to the preparation of the JTFEX/COMPTUEX EA/OEA, I was involved in drafting the After Action Report for RIMPAC 2006 required under the MMPA Incidental Harassment Authorization (IHA) permit received from NMFS. On 30 June 2006, the Deputy Secretary of Defense issued a six month National Defense Exemption per the MMPA, which specified that Navy would comply with all mitigation measures set out in the IHA for the RIMPAC 2006. The IHA provided specific data that the After Action Report

should contain to include: (1) "estimate of number of marine mammals affected by RIMPAC ASW . . . based on both the modeled results of real-time exercises and sightings of marine mammals"; (2) "An assessment of the effectiveness of the mitigation and monitoring measures with recommendations on how to improve them"; (3) "Results of marine species monitoring"; and (4) to the extent not classified "as much information . . . as the Navy can provide . . . where and when sonar was used . . . so it can be coordinated with observed cetacean behaviors."

9. Therefore, to prepare this report, I compiled data from the operators involved in the exercise to detail the marine mammal detections by exercise participants and evaluated effectiveness of the mitigation measures during RIMPAC 06. Ultimately, the report indicated that there was less hull mounted sonar use than anticipated (472 hours of hull mounted sonar vice the 532 anticipated and presented in the RIMPAC 2006 Supplemental EA) most likely because three days of MFAS training (25 events in total) were lost due to the Temporary Restraining Order restricting use of MFA sonar. Modeling in the Supplement to 2002 RIMPAC EA using the worst case analysis predicted that 289 marine mammals would be affected because of RIMPAC 06 ASW events. This modeling utilized acoustic thresholds derived from experimental data (190 db sound exposure level (SEL)). Due to the reduction in MFA sonar hours to 472 hours, the estimated potential number of marine mammals was reduced to 256 marine mammals. The After Action Report concluded though that approximately 100 of those 256 marine mammals were precluded from exposure to MFAS by implementation of the protective/mitigation measures based on the modeled results of real-time ex-

ercises, actual events and sightings. The report further concluded that there were no affected marine mammals observed by exercise participants, aerial or shore based monitors, or via any other reports. Finally, the report concluded that the 173 db SEL NMFS required for the analysis IHA was overly precautionary to a significant degree and that there was no evidence of behavioral effects on marine mammals throughout the exercise.

10. During RIMPAC 2006, MFAS was shutdown in 12 events resulting in 8 hours of lost warfighting training, thus impacting effectiveness of those military readiness activities. Some of the events during which MFAS was shutdown involved multiple units integrating their anti-submarine warfare skills. During the shutdowns, submarines that were in the vicinity of the participants went undetected, limiting the effectiveness of the training. Because the option to use MFAS was precluded as a result of the mitigation, the Commanding Officer was unable to utilize all of his available tactical sensors and the effectiveness of the exercise event was negatively impacted. Another important aspect of lost time during warfighting training involves the fact that the ship does not simply restart from the last frame of reference as when sonar was shutdown. Thus, the time lost must be placed within the context of the overall impact on the tempo and tactical development as the participants build and maintain a common operational picture working towards interoperability and improvement of ASW skills in general.

11. Because the RIMPAC 2006 IHA was the first authorization issued by NMFS for MFAS use during a Major Exercise, the mitigation measures required by the IHA and adopted for RIMPAC 2006 as drafted by NMFS

were purposefully inclusive of all potential mitigation measures without knowledge of their effectiveness even though these measures would impact the training fidelity of the exercise. This need for subsequent analysis and assumed necessary alteration of the measures was specifically why the IHA also required a report after the exercise providing an assessment of the mitigation and monitoring measures effectiveness with recommendations on how to improve them.

12. In evaluating the RIMPAC 2006 mitigation measures, the report determined that a subset of additional measures imposed by the IHA had no observed increased effectiveness in the protection of marine mammals during the exercise, and restricted the ability to train realistically in the known diesel submarine threat environments required for warfighting readiness. Those measures included: requirements regarding strong surface ducting conditions, low visibility conditions, restrictions on MFA within 25 kilometers from the 200 meter isobath, and restrictions on operating MFA sonar in constricted channels or canyon-like areas, or areas known as chokepoints.[2] Specifically for "choke-point" events, the additional monitoring efforts requiring additional aircraft surveillance monitoring, shoreline reconnaissance/observation, and the posting of additional Navy lookouts, provided no demonstrated value and, as

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[2] A chokepoint is a strategic strait or canal which could be closed or blocked to stop sea traffic. There are approximately 200 straits (narrow bodies of water connecting two larger bodies of water) or canals around the world but only a handful are known as chokepoints. While relatively few in number, significant quantities of international commerce and naval shipping moves through these chokepoints making them strategically important to the United States.

argued in the After Action Report, were not effective. These additional mitigation measures specific to chokepoint events were based on unfounded concerns that these particular events may have greater potential to impact marine mammals without consideration of the long history of identical exercises in these same locations and without regard for the unique environmental conditions in Hawaii making these events different than what were believed to be a critical confluence of factors in the Bahamas stranding in 2000.

III. ANALYSIS OF PARTICULAR MITIGATION MEASURES

13. Plaintiff's complaint alleges that the Navy "discarded several measures" from its mitigation plan incorporated into the RIMPAC settlement. Specifically, plaintiffs argue that the Navy has eliminated "mandatory power-downs at night, in low visibility conditions, and in surface ducting conditions that can cause noise to propagate at distances many times than experienced under normal conditions . . . done away with its 12 nm coastal buffer zone and has eliminated special provisions for 'chokepoint' exercises'." As detailed in the RIMPAC 2006 After Action Report, these measures were rejected because they either; (1) were not feasible; (2) present a safety concern; (3) provide no known or ambiguous protective benefit; or (4) impact the effectiveness of the required ASW training military readiness activity as detailed in the following:

a. **Power down at night or in low visibility conditions.**

Navy must be able to use a sensor such as MFA sonar when tactically required at night and in heavy seas

using the full potential of the sonar as a sensor. In the After Action Report, this measure was assessed to not be effective and directly affect military readiness training. Low visibility conditions were not encountered to a degree where Navy lookouts were unable to detect marine mammals outside of the safety zone.

b. Enlargement of the Safety Zone if Strong Surface Ducting Occurs.

This provision, imposed due to RIMPAC settlement terms, could not be accurately and uniformly employed during RIMPAC. Water conditions across the exercise area varied within even short distances within the Hawaiian Operating area to the extent that a determination of "strong surface ducting"[3] was futile. The provision failed to allow for local variations from tidal flux, differential sea states and currents/eddies which would have significant effect on surface ducting.

c. Visual lookouts

In general, Navy standard mitigation measures requiring lookouts and use of all available assets for marine mammal surveillance is adequate. There is no demonstrated benefit from additional observers, either civilian or military. In the case of RIMPAC, civilian observers did not have any significant contribution to surveil-

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[3] As defined under the RIMPAC IHA and first NDE: "A strong surface duct (half-channel at the surface) is defined as having all the following factors (1) A delta SVP between .6 to .2 m/s occurring within 20 fathoms of the surface with a positive gradient (upward refracting); (2) Sea conditions no greater than Sea State 3 (Beaufort Number 4); and (3) Daytime conditions with no more than 50% overcast (otherwise leading to diurnal warming)." This applied only to surface ship mid-frequency active mainframe sonar.

ance.[4] Moreover, each additional military observer assigned to marine mammal surveillance impacts training effectiveness by reducing the number of ship personal focusing on military-specific duties.

Plaintiffs assert that the "Navy's detection rate of visual monitoring is capable of detecting no more than five percent." The plaintiffs cite data regarding the slow-moving LFA platform which is very different than a MFA sonar equipped DDG, CG, or FFG. These ships have many observers on the bridge, dedicated lookouts, and aerial platforms likely engaged in scanning the water in the vicinity of an ASW operation.

Plaintiffs also claim that for beaked whales, "the Navy's detection rate is under two percent and approaches zero at distances of just one kilometer." The Plaintiffs make this assertion based on the discussion found in Exhibit 44, "Mitigating, Monitoring and Assessing the effects of Anthropogenic sound on Beaked Whales" by Jay Barlow and Robert Gisiner. However, I have read that article and plaintiff's assertion is false. The assertion that the detection rate of visual monitoring is 2% for beaked whales was a result of a non-Navy research study into the effectiveness of visual monitoring of seismic surveys conducted by a research vessel. The Navy has not indicated its detection rate based on visual monitoring for beaked whales is 2%. In fact, the cited study specifically states that it did not "include factors to account for training or experience in identifying beaked whales." Navy personnel serving as lookouts and on bridge (5 in total on surface ships according to the most

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[4] The RIMPAC 2006 AAR indicated that "[t]he contracted experienced cetacean researcher' did not spot any marine mammals in the vicinity of the exercise."

recent NDE) watch are highly qualified and experienced marine observers which further makes this non-Navy estimated statistic inaccurate. Navy lookouts undergo extensive training to include on-the-job instruction under the supervision of an experienced lookout followed by completion of the Personal Qualification Standard program. Periodically, they also undergo two-day refresher training courses. Marine Species Awareness Training is required before every JTFEX/C2X exercise as re-implemented in the most recent NDE. That training DVD addresses the lookout's role in environmental protection, laws governing the protection of marine species, Navy stewardship commitments, and general observation information to aid in avoiding interactions with marine mammals.

d. 12NM Coastal Zone

Plaintiffs argue on page 12 of the motion for preliminary injunction that "Navy has chosen to eliminate the only geographical exclusion that it formerly had in place: a 12 nm coastal exclusion zone."

First, the 12 nm exclusion zone was a metric not based on science. This exclusion significantly impacted military readiness because it precluded active ASW training in the littoral region. It also affected the ability of the Navy to realistically "train as it fights" in the known diesel submarine threat environment. The provision had no observable effect on protection of marine mammals, as there is no scientific basis for the metrics. There is no data to indicate that 12 nautical miles is in any way more important to marine mammals than areas farther offshore. The use of a12 [*sic*] nautical miles exclusion is a totally arbitrary distance without any basis in science. Such an exclusion zone is not practicable for MFA sonar

use because MFA sonar is vital for littoral ASW training within 12 nautical miles of shore.

e. A 1,000 yard safety zone being too small

Plaintiffs argue that "Navy's own analysis concludes that harmful noise is capable of extending 5 km from a 1-second exposure-well outside the Navy's safety zone even under the Navy's standards." The Navy's analysis has never characterized noise as "harmful". The area where the onset of injury (the first measurable physiological change) has been shown to occur for a 1-second exposure is on the order of approximately 50 meters (from a 235 dB source) not, as the Plaintiffs argue, a distance of 5,000 meters. Further, the RIMPAC 2006 After Action Report assessed that a safety zone of 1,000 yards was the maximum distance that ship commanding officers could certify "safe" for marine mammals or decrease the output of MFA sonar. This safety zone has been Navy standard operating procedure and has been retained through the most recent NDE. The change from meters to yards was simply done because all Navy training and operations uses yards as a term of measurement reference and based on my research there is no substantive difference in sound propagation between 1000 meters and 1000 yards. Plaintiffs are wrong to insinuate a reduction of the safety zone due to that change.

14. Plaintiffs argue that Navy has 2000 meter shut down zone for SURTASS LFA which is more protective than its 200 yard shut-down zone for MFA sonar. Equating these two sonar systems of extremely different frequencies ranges is completely misleading and is like comparing 20 degrees Fahrenheit to 20 degrees Celsius. Moreover, the 2000 meter zone for SURTASS/LFA is

based on the effective range of the High Frequency Marine Mammal Monitoring (HFM3) system mounted on the source. The HFM3 is not suitable to tactical sonars due to ship speed and configuration of the hull mounted mid-frequency active sonar.

15. On page 14 of the motion for preliminary injunction, Plaintiffs argue that the U.S. Navy should be able to use a 4,000 yard safety zone as established by the Royal Australian Navy during combined exercises. In my tenure at Fleet Environmental, I have discussed safety zone feasibility extensively with ship's operators. A 4,000 yard safety zone is not practicable. Increasing the safety zone from 1,000 yards to 4,000 yards increases sixteenfold the area watchstanders must monitor. Increasing the size and distance of the zone by such a degree reduces the Commanding Officer's ability to reasonably ensure the zone is clear of marine mammals before commencing training involving the use of MFAS. Navy is comfortable that watchstanders (using varying types of binoculars) are able to effectively monitor a 1,000 yard safety zone under a wide range of conditions under which they may conduct ASW training. Moreover, the 1,000 yard zone already represents a conservative effort to protect marine mammals. Therefore, contrary to Plaintiff's opinion, Navy has considered expanding the safety zone, but it has determined beyond 1,000 yards to be impracticable and ineffective.

IV. MID FREQUENCY ACTIVE SONAR USE IN SOUTHERN CALIFORNIA

16. The Navy sonar exercises contemplated by the proposed actions described in the JTFEX-COMPTUEX EA/OEA have occurred off the coast of Southern California for nearly forty (40) years using the same basic

MFA sonar system. Prior to development of the current sonar system, the Navy's use of the SOCAL Operating area for anti-submarine warfare training began around 1937. During WWII, Navy personnel training with sonar used those systems effectively against enemy submarines during combat operations. Those activities were similar in nature and intensity to those currently analyzed in the JTFEX-COMPTUEX EA/OEA. The current mid-frequency active sonar system development dates back to the mid-1950s. The current capability in terms of energy source levels was deployed on Navy ships beginning in the 1970s.

17. During the early 1980s, the Navy consisted of 535 Ships, 91 attack submarines, 35 ballistic missile submarines (SSBNs). This figure included 208 ships equipped with mid-frequency active sonar, cruisers, destroyers and frigates. Today's Navy consists of about 103 sonar equipped surface ships, including 22 cruisers, 51 destroyers and 30 frigates. There are, therefore, substantially fewer ships using sonar than there have been in the past.

V. MARINE MAMMAL ENVIRONMENT IN SOUTHERN CALIFORNIA

18. To the best of my knowledge during the roughly forty (40) year history of conducting naval training exercises involving MFA sonar in the SOCAL operating area, there have been no known adverse impacts to marine resources resulting from the use of MFA sonar. I am familiar with the Navy's marine mammal incident reporting requirements. The process requires that U.S. Pacific Fleet be informed of any whale strandings in the Third Fleet Area of Responsibility. During my eight years at Fleet, I had been an action officer on Fleet staff

for such reporting. Therefore, if there had been a marine mammal stranding due to Navy interaction with the marine mammals, I would be informed. During these eight years, I never received a report or accusation of a marine mammal stranding within the off-shore waters of Southern California that alleged MFA sonar use as the cause.

19. Navy required the use of mitigation measures for all training events involving the use of MFAS since late 2002. Prior to that, Navy units were using lookouts, scanning methodology, other navigations tools as standard operating procedure and requiring safety zones as part of major exercises to minimize interaction with marine mammals. I was involved in revising the Lookout Training Handbook (NAVEDTRA 12968-B) beginning in 2001 to provide information that would enable Navy operators to minimize interactions with marine mammals. The result of this emphasis on protection of marine species was the creation of the Marine Species Awareness Training video, which has been provided to exercise participants since July 2006 as a DVD and as an on-line interactive training.

20. As the Plaintiffs note, the SOCAL waters are among the richest marine mammal habitats in the world. ASW operations using the same basic sonar equipment practicing the same skills have been conducted for decades in SOCAL. There has been no evidence of any harm to any marine mammal populations or other marine resources in SOCAL in this timeframe. The plaintiffs, concerned that harm may occur if exercises proceed, fail to demonstrate any harm resulting from the prior decades of ASW operations in the waters of SOCAL.

21. If any of the alleged harms were valid, they would already be evident. On the basis of the Navy's long history of operating MFA sonar in SOCAL and population density of marine mammals here, it is reasonable to conclude that there have been no adverse impacts on marine resources attributable to MFA sonar. In addition, given implementation of the Navy's standard mitigation measures, it is unlikely that Antisubmarine Warfare training using MFA sonar would disrupt natural behavior patterns to a point where behaviors are abandoned or significantly altered. Thus, there is no evidence of any adverse impacts if these exercises proceed as planned and described in the JTFEX-COMTPUEX EA/OEA.

Pursuant to 28 U.S.C. §1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

Executed this 6th day of July, 2007 in Huntsville, Alabama.

/s/ CONRAD ERKELENS
CONRAD ERKELENS

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DISTRICT

Case No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Hearing Date: July 23, 2007
Time: 10:00 a.m.

Hon. Florence-Marie Cooper
U.S. District Judge

DECLARATION OF DORIAN S. HOUSER IN SUPPORT OF DEFENDANT'S OPPOSITION TO PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

I, DORIAN S. HOUSER, do hereby declare as follows:

I. BACKGROUND

1. I graduated, summa cum laude, from Coker College in 1992 with a Bachelor of Arts degree in Biology. I

then earned a Doctor of Philosophy degree in Biology from the University of California, Santa Cruz in 1998.

2. From 1998 until 2001 I completed a National Research Council Post-Doctoral Fellowship at the Navy Marine Mammal Program, San Diego, California.

3. I presently hold two academic positions: Associate Adjunct Professor of Biology at Sonoma State University, Rohnert Park, California, and Adjunct Professor of Psychology at the University of Southern Mississippi, Hattiesburg, Mississippi. I have held the position at Somoma State University since 2001 and the position at the University of Mississippi since 2002.

4. I am also currently employed as the owner and operator of BIOMIMETICA, a consulting firm located in Santee, California. As the owner and operator of BIOMIMETICA, I perform contracted consultations on the study and modeling of biological systems.

5. My past and present research focuses on marine mammal dive and fasting physiology and marine mammal bioacoustics. Research unrelated to the Navy includes:

a. Determination of mechanisms permitting long term fasting and water deprivation in phocid seals

b. Investigations of the foraging ecology of the northern elephant seal (Mirounga angustirostris)

c. Investigations in the zooplankton community dynamics

6. I have worked on the following specific studies for the Navy:

a. Computation modeling of dolphin and whale auditory systems

b. Dolphin biosonar control and echolocation search strategies

c. Development and application of auditory evoked potential methods for application to marine mammal audiometry

d. Development of marine mammal dive and behavior models for use in environmental impact assessment

e. In vivo characterization of dolphin anatomy and physiology via means of structural and functional medical imaging techniques (e.g., CT, PET, MRI)

f. Determining the presence and potential for nitrogen bubble formation in delphinids resulting from repetitive diving

g. Assessing behavioral and physiological impacts of sound on marine mammals

7. I have over 40 percent peer-reviewed scientific publications and book chapters, many of which deal with marine mammals and acoustics. I have been awarded the R. Bruce Lindsay Award by the Acoustical Society of America for outstanding contributions to the study of animal bioacoustics.

8. I work on a contract basis for the Navy and have been asked to comment on the historical impact of MFA sonar in Southern California (SOCAL) and whether the harm alleged by Plaintiffs in their Preliminary Injunction (PI) Motion is scientifically supported.

9. My curriculum vita is attached to this declaration as Exhibit 1.

II. IMPACT OF MID-FREQUENCY ACTIVE SONAR (MFAS) ON SOCAL STOCKS

10. The use of MFA sonar in the Southern California (SOCAL) region has been occurring for over four (4) decades. Over this period, numerous surveys consisting of both line-transect and mark-recapture techniques have been used to monitor populations in this region and within the Eastern North Pacific. No systematic decline in populations of marine mammals over this period can be attributed to the use of MFA sonar. Reductions in population estimates have been observed over shorter periods of time, but are likely do to changing oceanographic conditions and its effect on prey distributions and/or variation in survey effort over time (see #11 below). On the contrary, many stocks are believed to have either remained stable or to have increased over the last four (4) decades, particularly those afforded protected status from whaling and those that have benefitted from increased regulation of fisheries activities. Examples of species that have been stable or shown indications of increasing population size include the California sea lion (Zalophus californianus), Northern fur seal (Callorhinus ursinus), Morrow Bay harbor porpoises (Phocoena phocaena), humpback whales (Megaptera novaeangliae), and blue whale (Balaenoptera musculus).

11. Reductions in population estimates have been observed for some SOCAL cetaceans over discreet periods of time (e.g blue whales (Balaenoptera musculus) between the years of 1996 and 2001). Probable contributing factors to reductions in population estimates are

temporal and spatial variability in the level of survey effort and the ephemeral and dynamic nature of the habitat used by these species. As an example, National Marine Fisheries Service (NMFS) 2005 stock assessments for the Pacific warn that recent population estimates of fin whales are potentially slightly underestimated because of the likelihood of sighted but unidentified whales belonging to this species. Furthermore, the timing of survey effort may contribute to underestimates as the stock may extend beyond coastal waters during the winter and spring (Caretta *et al.* 2006).

12. The distribution and availability of food is likely a primary factor contributing to various in abundance estimates for many marine mammal species. Reductions in population estimates for the blue whale in 2001 follow the occurrence of a strong El Nino Southern Oscillation (ENSO) in 1998 (the prior population estimate for blue whales was made in 1996, prior to the ENSO; (Caretta *et al.* 2006)). The ENSO is a meteorological and oceanographic phenomenon that consists, in part, of dramatic changes in the spatial distribution of ocean water temperatures. Studies of the impact of the 1998 ENSO on a marine predator, the northern elephant seal (Mirounga angustirostris), indicates that the ability of this marine mammal to find and acquire food during the event was profoundly inhibited (Crocker *et al.* 2006). If the 2001 estimates of blue whale population size reflect a real decline in the population, it is more likely a result of ENSO impacts on the population than any effect of anthropogenic sound. The impact of the ENSO has been observed on a number of species (e.g. Northern fur seal, California seal lion). Similar conclusions regarding the

availability and distribution of prey can generally be made for all marine mammal species.

13. In general, the documented impact to marine mammals resulting from fisheries interactions is far greater than that documented for MFA sonar. For the period of 1990-1999, the mean annual by-catch of marine mammals in United States fisheries was 6,215; global estimates for the period of 1990-1994 were 653,365 (Read *et al.* 2006). Models of fisheries and marine mammals interactions suggest that fisheries practices are likely to continue to impact marine mammals, potentially resulting in a reduction in the number of extant populations and species richness (DeMaster *et al.* 2001). Impacts may further be aggravated by competition between marine mammal stocks and fisheries over primary productivity (Trites *et al.* 1997).

14. By comparison, documented mortalities most likely resulting from sonar operations are small. Globally, the number of animals observed to strand coincident with naval sonar operations from the period of 1950-2006 is approximately 100 individuals (Chip Johnson, pers. comm.). Some of these observations are described in peer-reviewed manuscripts (Evans and England 2001; Fernandez *et al.* 2005; Frantzis 1998; Simmonds and Lopez-Garret 1991) wherein the spatial and temporal relationship between miliary maneuvers, sonar activities and the stranding events are documented (i.e., the Bahamas (2000), Canary Islands (1989, 2002), and Kyparissiakos (1996)) and in which post-mortem analysis suggest atypical pathologies associated with the stranding (Cox *et al.* 2006; Evans and England 2001; Fernandez *et al.* 2005; Ketten 2005). Recent analysis of other known beaked whale stranding events conducted by the U.S.

Navy has suggested that other incidents, which are not as well documented as those listed previously, may also demonstrate a link between Navy maneuvers and beaked whale stranding (Chip Johnson, pers. comm.). Conservatively assuming all of these incidents were due to the use of MFAS, the number of stranded beaked whales resulting from exposure to MFAS is approximately 2 per year, globally. In these events, nearly all strandings deemed to be related to the sonar activity were beaked whales species, being predominantly Cuvier's beaked whales (Ziphius cavirostris) and to a lesser extent both Blainsville (Mesoplodon densirotsrtis) and Gervais' beaked whales (M. europaeus). To my knowledge, other than the instances mentioned above, there are no documented mortalities of marine mammals related to sonar operations. This starkly contrasts with the estimated 650,000 marine mammals annually caught as by-catch from global fisheries activity (Read *et al.* 2006).

15. The traumas noted in the stranding of beaked whales in the Bahamas and Canary Islands have been suggested as being related to the evolution of gas bubbles resulting from altered dive behavior following acoustic exposure. I personally promoted this hypothesis as one in need of investigation based upon the types of trauma that were observed in these strandings (e.g. subarachnoid hemorrhaging, lung hemorrhage, hemorrhage of the acoustic fats; (Evans 2002; Houser *et al.* 2001). Unfortunately, this hypothesis has been widely accepted without ever being tested. Furthermore, this hypothesis has been used to concluded that 1) other marine mammals can suffer from the same phenomenon and that 2) bubble formation can occur at sea, thus injuring the ani-

mals prior to arrival on land. With respect to the first item, no other marine mammals besides the beaked whales have demonstrated the suite of injuries that were observed in the Bahamas and Canary Islands stranding events. The traumas appear to be peculiar to this family of cetacean. With respect to the second item, little consideration has been given to the possibility that bubble formation, if it occurs, happens after the animals have stranded on the beach. Once stranded, the lung and vascular system are unlikely to work effectively under the weight of the whale's own body, potentially preventing nitrogen gas from being cleared from the body. Under these conditions, bubble formation may occur after the animal has stranded. Therefore, it may not be a cause of stranding in beaked whales, but a result of stranding. Insufficient evidence exists to make any definitive claims about the causative mechanism of stranding in past beaked whale stranding events.

16. Other stranding events purported to be related to sonar (Heinously Bay, 2004) (melon headed whales); Hard Strait, 2003 (harbor porpoises); and North Carolina, 2005 (pilot whales and pygmy sperm whales) are strongly contested on scientific grounds.

a. I prepared a thorough analysis regarding the Heinously Bay event on June 23, 2006, which is attached to this declaration as Exhibit 2. It is also worth nothing that a similar incident occurred on the exact same day, over 1000 miles away, off the coast of the Northern Marianas Islands, without the presence of sonar.

b. Speculations that harbor porpoises stranded in response to the use of MFAS by the USS Shoup

in Haro Strait are not supported by any post-mortem findings and are contradicted by the temporal pattern of stranding. No evidence of acoustic trauma was noted in any harbor porpoises found to strand before or after the use of the MFAS by the USS Shoup in Haro Strait (National Marine Fisheries Service (Office of Protected Resources) 2005; Norman *et al.* 2004). Given historical evidence, the temporal distribution of stranded animals is inconsistent with acute acoustic trauma as a causative mechanism of stranding. The Bahamas and Canary Island stranding demonstrated that animals arrived on shore rapidly following exposure, within approximately 36 hours. Of the 15 porpoises reported as stranded, four were determined to have stranded before the SHOUP sonar exercise, seven were reported from one of three weeks later. Furthermore, stranded porpoises either showed no stomach contents (n = 6) or only scant remains of ingested material (n = 4). This contrasts with the Canary Islands and Bahamas strandings in which the stomach contents of many of the whales indicated recent feeding. The Canary Islands and Bahamas findings fit the hypothesis of a recent and acute acoustic exposure leading to the stranding in those cases. The consistent absence or minimal presence of ingested material in the porpoises stranded in Washington State is suggestive of a more chronic phenomenon. A presumptive cause of death, unrelated to acoustic exposure, was determined for 5 of the 11 porpoises and was indeter-

minable for the remaining animals on which necropsy procedures were performed.

c. A mixed species stranding (33 short-finned pilot whales, *Globicephala macrorhynchus*, one minke whale, *Balaenoptera acutorostrata*, and two dwarf sperm whales, *Kogia sima*) occurred on the beaches of North Carolina during January 15-16, 2005 (Hohn *et al.* 2006). Although promoted by some to be related to MFAS operations, the available evidence suggests otherwise. Sloping beaches, land protuberances, and a lack of deep embayments were present at the North Carolina stranding sites, conditions which have also been observed as being related to other mass stranding events (Walker *et al.* 2005). Additionally, a strong storm moved into the region on January 14 and produced shifting winds that caused changes from upwelling to downwelling favorable conditions, conditions that are also related to stranding events (Walker *et al.* 2005). The storm was sufficient to produce tornadoes in the central part of the state and was determined a severe weather event by the National Weather Service.

17. Since the mass stranding of beaked whales in the Bahamas (2000), the United States Navy has avoided, when possible, training situations where the characteristics of the sonar operations and the envionmental conditions are believed to possibly contribute to beaked whale strandings. Specifically, the Navy avoids, when possible, 1) regions with steep sloping bathymetry, 2) multiple ships using MFA sonar, 3) regions with limited egress, and 4) regions with siginificant surface ducting

conditions. Since the implementation of these mitigation measures, the United States Navy has not experienced antoher mass stranding of beaked whales. In addition, to my knowledge, none of the exercises carried out during 2007 within the SOCAL region have resulted in a stranding event suggesting that the implementation of these measures has been effective in the prevention of cetacean strandings coincident with MFAS operations. In fact, I know of no stranding events within the SOCAL region that have ever been attributed to use of MFA sonar. (The Environmental Assessment/Overseas Environmental Assessment (EA/OAE) for the Composite Training Unit Exercises (COMPTUEX) and Joint Task Force Exercises (JTFEX) addresses specific mitigation measures in section 5 and references the beaked whale strandings at number 26.)

18. Mid-frequency active sonar may cause behavioral disturbances of marine mammals; however, activities tend to be confined in time and it is unlikely that short term variations in animal behavior resulting from MFAS activities will translate into significant biological impacts. I am aware of no controlled studies in the wild utilizing MFAS or MFAS-like signals. However, several studies using low-frequency signals (<500 Hz) have been conducted. Large whales exposed to such signals demonstrate either no reaction (Croll *et al.* 2001), avoidance reactions (Tyack *et al.* 1991), subtle changes in surfacing behavior (Frankel and Clark 1998); Frankel and Clark 2000), or changes in vocal behavior (Miller et al. 2000). Exposure of Northern right whales (*Eubalaenus glacialis*) to mid-frequency alarm signals, specifically generated to elicit a behavioral reaction from the whale, demonstrated that certain signal types could cause a cessation in diving behavior (Nowacek *et al.* 2004). The

signals used in the this latter study are not analogous to those of MFAS signals; they consisted of tonal, frequency swept, and amplitude modulate signals emitted at a high repetition rate (approximately every 3.3 seconds for periods up to 18 minutes). In instances where observations following the cessation of sound production are recorded, behaviors quickly returned to normal. For smaller odontocetes submitted to acoustic deterrents, similar results have been found. Studies on dolphins and harbor porpoises have shown that dolphins will tend to acclimate to the presence of acoustic deterrents and that harbor porpoises, though avoiding the area of the deterrent while operational, return to the area once the deterrent is removed (Cox *et al.* 2001; Cox *et al.* 2003; Culik *et al.* 2001). Therefore, the available evidence suggests that even though temporary behavioral reactions to sound exposure may occur, responses are unlikely to be of a duration or magnitude to result in biologically significant impacts if the duration of the activities are short and transient in nature. The fact that marine mammal stocks in the SOCAL region have demonstrated no systematic decline in the presence of MFAS training over a four (4) decade period supports this proposition.

19. Navy actions that may potentially affect the environment require the Navy to perform an environmental impact analysis. With respect to impacts on marine mammals, the modeling efforts involved often employ several conservative assumptions that result in what are likely to be dramatic overestimates in impacts. Specifically, modeling traditionally assumes that marine mammals are static in the marine environment; that is to say, they do not move during the simulated exercise. As such, the simulated animals are not capable of moving in

response to MFAS exposure and receive higher levels of exposure than would occur if the simulated animals were permitted to move in response to the MFAS, as might be expected to occur in the real world. Secondly, simulated animals are often assumed to receive the highest level exposure for the entire water column, even though sound fields can vary dramatically with depth. A diving animal would have a good probability of receiving a sound exposure below the maximum due to its diving behavior. Unfortunately, when impacts are numerically defined, the conservative assumptions are often neglected by the public and the numbers are utilized as being precise estimates of impact, sometimes on the orders of many tens of thousands.

20. In light of the fact that there has been relatively little information obtained on the behavioral responses of cetaceans to MFAS, the National Marine Fisheries Service requested the Navy perform an analysis of data originally collected on Navy dolphins to determine sound level exposures that resulted in temporary threshold shifts (Finneran and Schlundt 2004). This post-hoc analysis was conducted to determine exposure levels that might cause behavioral reactions to the exposure. The results of the analysis have been used to estimate behavioral harassment in past impact models. The analysis is limited by the fact that the animals had experience with the types of signals to which they were exposed; however, participation in the testing was voluntary and the animals had the ability to refuse participation at any point during the test. The strength of the analysis lies in the fact that the acoustic environment was controlled and exposure levels of the animals could be accurately determined. In contrast, open ocean test-

ing conditions of most exposure studies have not permitted acoustic dosages to be determined, but require them to be estimated. Also, the signals used for the exposure in the captive dolphin study were tonal signals of a frequency and duration similar to that used by MFAS, thus making the exposure scenario more applicable than other signals types used in the intentional acoustic exposure of wild animals. Although all "altered" reactions observed in the study were used in the determination of harassment thresholds, it should be noted that it is unlikely that most of the behaviors would equate to disturbance that are biologically significant in the natural world. If such behaviors did equate to biologically significant impacts, then by the Navy's own modeling efforts, there should be dramatic population level consequences as a result of continued MFAS training and operations. As noted in 10, the available information on marine mammal stocks does not support this speculation.

III. CONCLUSION

21. In summary, it is unlikely that MFA sonar use has significantly impacted stocks of marine mammals in the SOCIAL region during the decades that MFA sonar has been used for training in that region. In contrast, variations in marine mammal stock sizes are likely to be predominantly affected by environmental changes and fisheries interactions.

Pursuant to 28 U.S.C. § 1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information an belief.

Executed this 5th day of July 2007 at San Diego, CA.

/s/ DORIAN S. HOUSER

DORIAN HOUSER, Ph.D.

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DISTRICT

Case No. TBD

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF THOMAS A. JEFFERSON

I, THOMAS A. JEFFERSON, declare the following:

1. This Declaration is submitted in reference to Plaintiffs' motion for a preliminary injunction. The statements contained in this Declaration are true and correct to the best of my knowledge. If called as a witness, I could and would testify competently to the statements contained herein.

2. I received my Ph.D. in Wildlife and Fisheries Sciences in 1995 from Texas A&M University, and since 1998 have been a Visiting Scientist at the Southwest Fisheries Science Center, NOAA Fisheries, in La Jolla,

California (disclaimer: the opinions presented in this declaration are those of Dr. Jefferson, and do not necessarily reflect the views of NOAA Fisheries). Over the last twenty-four years, I have spent my career conducting research on a variety of cetacean populations, particularly of odontocetes, in various parts of the world, and am lead author of a comprehensive, global guide to marine mammal identification that is currently in press (Academic Press/Elsevier). In all, I have served as author or co-author on more than 90 scientific publications, as well as on 10 technical reports to government and intergovernmental agencies, many of which are concerned with the distribution, abundance, and structure of marine mammal populations. Among my professional affiliations, I have been a member of the Cetacean Specialist Group at the IUCN Species Survival Commission since 1993. A copy of my curriculum vitae is appended to this Declaration as Exhibit A.

3. In preparing this Declaration, I reviewed relevant parts of the Navy's Environmental Assessment for JTFEX and COMPTUEX exercises off southern California, as well as scientific literature on the distribution and abundance of marine mammals in the region. The conclusions I draw and opinions I express are supported by texts and research that other experts in my field would consider reliable.

4. In recent years, there has been a heightened level of concern about the effects of military mid-frequency sonar on marine mammals. Such sonar operations have been linked to the unusual strandings of a number of species of beaked whales and other cetaceans (e.g., Evans and England 2001; Southall et al. 2006;

Wang and Yang 2006).[1] Military sonar is even known to lead to the deaths of cetaceans, primarily beaked whales (e.g., Balcomb and Claridge 2001; Cox et al. 2006).[2] The mechanism by which death occurs is incompletely understood, but appears to be related to formation of gas bubbles in the blood (e.g., Fernández et al. 2005; Rommel et al. 2006).[3] In addition, a number of less severe, but still

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[1] D.L. Evans and G.R. England (2001), "Joint Interim Report: Bahamas Marine Mammal Stranding Event of 15-16 March 2000," Washington: U.S. Department of Commerce, 59pp; B.L. Southall, R. Braun, F.M.D. Gulland, A.D. Heard, R.W. Baird, S.M. Wilkin, and T.K. Rowles (2006), "Hawaiian Melon-headed Whale (*Peponocephala electra*) Mass Stranding Event of July 3-4, 2004," NOAA Tech. Memo. NMFS-OPR-31, Washington: U.S. Department of Commerce, 73pp; J.Y. Wang and S.-C. Yang (2006), "Unusual cetacean stranding events of Taiwan in 2004 and 2005," *J. Cetacean Research & Management* 8(3): 283-292.

[2] K.C. Balcomb and D.E. Claridge (2001), "A mass stranding of cetaceans caused by naval sonar in the Bahamas," *Bahamas J. of Science* 5:2-12; T.M. Cox, T.J. Ragen, A.J. Read, E. Vos, R.W. Baird, K. Balcomb, J. Barlow, J. Caldwell, T. Cranford, L. Crum, A. D'Amico, G. D'Spain, A. Fernández, J. Finneran, R. Gentry, W. Gerth, F. Gulland, J. Hildebrand, D. Houserp, T. Hullar, P.D. Jepson, D. Ketten, C.D. Macleod, P. Miller, S. Moore, D.C. Mountain, D. Palka, P. Ponganis, S. Rommel, T. Rowles, B. Taylor, P. Tyack, D. Wartzok, R. Gisiner, J. Mead, and L. Benner (2006), "Understanding the impacts of anthropogenic sound on beaked whales," *J. Cetacean Research & Management* 7(3): 177-187.

[3] A. Fernández, J.F. Edwards, F. Rodríguez, A. Espinosa de los Monteros, P. Herráez, P. Castro, J.R. Jaber, V. Martín, & M. Arbelo (2005), "'Gas and fat embolic syndrome' involving a mass stranding of beaked whales (Family *Ziphiidae*) exposed to anthropogenic sonar signals," *Veterinary Pathology* 42: 446-457; S.A. Rommel, A.M. Costidis, A. Fernández, P.D. Jepson, D.A. Pabst, W.A. McLellan, D.S. Houser, T.W. Cranford, A.L. van Helden, D.M. Allen, and N.B. Barros (2006), "Elements of beaked whale anatomy and diving physiology and some hypothetical causes of sonar-related stranding," *J. Cetacean Research & Management* 7(3): 189-209.

potentially-detrimental, behavioral impacts of sonar and other intense mid-frequency sources have been documented in a variety of marine mammal species, including baleen whales (e.g., Rendell and Gordon 1999; Richardson et al. 1995; Nowacek et al. 2004).[4]

5. A large number of marine mammals, 45 species, are presently known to occur in the Navy's exercise area off southern California and northern Baja California, Mexico, with 36 species regularly occurring there. The total includes six species listed as Endangered under the U.S. Endangered Species Act (the blue whale, fin whale, North Pacific right whale, sei whale, humpback whale, and sperm whale), three listed as Threatened (the Guadalupe fur seal, Steller sea lion, and sea otter), and eight species of beaked whales, a family of species that is known for its particular vulnerability to mid-frequency sonar. A complete list of species is appended to this Declaration as Exhibit B.

6. Most of the species regularly found in the exercise area may be expected to occur there within 3 nautical miles of shore, either exclusively as in the case of the coastal bottlenose dolphin or as part of their range. These species include most of the regularly occurring baleen whales, including the blue whale, fin whale, minke whale, humpback whale, and gray whale; most of the beaked whales, including Blainville's, Baird's, and

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[4] E. Rendell and J.C.D. Gordon (1999), "Vocal responses of long-finned pilot whales (*Globicephala melas*) to military sonar in the Ligurian Sea," *Marine Mammal Science* 15:198-204; Richardson, W. J., C. R. Greene, C. I. Malme, and D. H. Thomson. 1995. *Marine Mammals and Noise*. Academic Press, San Diego, CA; Nowacek, S. M., R. S. Wells, E. C. G. Owen, T. R. Speakman, R. O. Flamm and D. P. Nowacek. 2004. Florida manatees, *Trichechus manatus latirostris*, respond to approaching vessels. Biological Conservation 119:517-523.

Cuvier's beaked whales; most of the other toothed cetaceans, including the killer whale, short-finned pilot whale, and bottlenose dolphin; all of the sea lions and seals, including the Steller sea lion and Guadaulpe fur seal; and the sea otter.

7. The southern California region contains important habitat for a number of marine mammal species.

8. For example, the blue whale (*Balaenoptera musculus*) is listed as Endangered under the U.S. Endangered Species Act, as well as on the Red List of the IUCN-World Conservation Union, a recognized index of endangered and vulnerable species worldwide. As the largest animal on earth, it was heavily hunted to commercial extinction in the 20th century, but has shown evidence of some recovery in many areas of its range since the cessation of commercial whaling. The west coast population clearly increased following the end of whaling, but in recent years evidence for a continued increase is equivocal (Carretta et al. 2007).[5]

9. Blue whales are found through much of the Southern California Bight area, at least seasonally. Satellite tracking suggests that the entire area around the Channel Islands is an important area for feeding, and a corridor off Baja California to about 100 nautical miles ("nm") offshore is also part of their migratory route (Mate et al. 1999).[6] These areas are mainly occupied

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[5] J.V. Carretta, K.A. Forney, M.M. Muto, J. Barlow, J. Baker, B. Hanson, and M.S. Lowry (2007), "U.S. Pacific Marine Mammal Stock Assessments, 2006," NOAA Tech. Memo. NOAA-TM-NMFS-SWFSC-398, La Jolla, Cal.: NMFS Southwest Fisheries Science Center, 312pp.

[6] B.R. Mate, B.A. Lagerquist, and J. Calambokidis (1999), "Movements of North Pacific blue whales during their feeding season off

from about May through November, with peak abundance from July through September. Along the California coast, blue whales feed near the edge of the continental shelf. In Monterey Bay (where feeding ecology studies have been most detailed), they were found to concentrate their feeding in areas as shallow as 130-150 meters ("m") depth, where the steep walls of a submarine canyon had pushed swarms of krill to the surface (Schoenherr 1991);[7] and it is likely that, in southern California, the steep walls of the upper continental slope would do the same. It would be important to provide some protection for the upper slope during appropriate seasons, both for the blue whale and for the humpback whale, another endangered species, which also forages in and migrates through that area.

10. Within the exercise area, there are a number of marine mammal populations that, while not listed under the U.S. Endangered Species Act, have very low abundance and are therefore particularly vulnerable to human impacts. For example, the coastal population of bottlenose dolphins, which occurs almost exclusively within 1 kilometer of shore from Ensenada, Mexico, to at least as far north as the San Francisco Bay area, is estimated at 323 animals (Dudzik et al. 2006),[8] though

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southern California and their southern fall migration," *Marine Mammal Science* 15: 1246-1257.

[7] J.R. Schoenherr (1991), "Blue whales feeding on high concentrations of euphausiids around Monterey Submarine Canyon," *Canadian Journal of Zoology* 69: 583-594.

[8] K.J. Dudzik, K.M. Baker, and D.W. Weller (2006), "Mark-recapture abundance estimate of California coastal stock bottlenose dolphins: February 2004 to April 2005," SWFSC Administrative Report LJ-06-02C, La Jolla, Cal.: NMFS Southwest Fisheries Science Center, 15pp.

the true number is probably closer to 450-500 (Carretta et al. 2007). It is not listed under the Endangered Species Act, but is clearly highly vulnerable, due both to its small size and extremely coastal habits; and it is important that the entire mainland coastal strip of the exercise area be protected for these animals. Other small, vulnerable populations occurring within the exercise area include the transient killer whale, with an estimated abundance of 314 (Angliss and Outlaw 2007; Caretta et al. 2007).[9] Transient killer whales make use of relatively restricted nearshore areas in some parts of western North America, thereby increasing their vulnerability. Also, the short-finned pilot whale, with U.S. west coast abundance estimated at 304 whales (almost all of these in the Southern California Bight - Carretta et al. 2007) is a species of concern.

11. Eight species of beaked whales are known to occur in the southern California area: Baird's beaked whale (*Berardius bairdii*), Cuvier's beaked whale (*Ziphius cavirostris*), Blainville's beaked whale (*Mesoplodon densirostris*), ginkgo-toothed beaked whale (*Mesoplodon ginkgodens*), Perrin's beaked whale (*Mesoplodon perrini*), Hubbs' beaked whale (*Mesoplodon carlhubbsi*), pygmy beaked whale (*Mesoplodon peruvianus*), and Longman's beaked whale (*Indopacetus pacificus*). Beaked whales should be considered species of concern due to their acute vulnerability to military sonar activities.

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[9] R.P. Angliss and R.B. Outlaw (2007), "Alaska Marine Mammal Stock Assessments, 2006," NOAA Technical Memorandum NMFS-AFSC-168, Seattle, Wash.: NMFS Alaska Fisheries Science Center, 255 pp.

12. There are no particular areas of known concentration for beaked whales in the region, but most species appear to have a general preference for waters of the lower continental slope. This habitat preference is probably most apparent for Baird's beaked whale, which seems to have a strong preference for continental slope and seamount areas; but these species can also be found in a wide range of conditions, from slopes to abyssal plains, and from well-mixed to highly stratified waters (Ferguson 2005; Ferguson et al. 2006).[10] More work is clearly needed to accurately identify critical habitats for these animals in the southern California area (see Ward et al. 2005);[11] but due to their estimated low abundance, apparent concentration in deep water, and high vulnerability to sonar, at minimum the area of the continental slope from 1000-2000 m water depth should be protected.

13. In general, the Channel Islands are used as important habitat for a number of cetacean and pinniped species, including several strategic species, such as the blue whale and Guadalupe fur seal, and have been recognized as such by their inclusion in the national marine sanctuary program. The Channel Islands are also im-

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[10] M.C. Ferguson (2005), "Cetacean Population Density in the Eastern Pacific Ocean: Analyzing Patterns with Predictive Spatial Models," Ph.D. dissertation, University of California at San Diego, 203pp.; M.C. Ferguson, J. Barlow, S.B. Reilly, and T. Gerrodette (2006), "Predicting Cuvier's (*Ziphius cavirostris*) and *Mesoplodon* beaked whale population density from habitat characteristics in the eastern tropical Pacific Ocean," *J. Cetacean Research and Management* 7(3): 287-299.

[11] J.A. Ward, G.H. Mitchell, A.M. Farak and E.P. Keane (2005), "Beaked whale habitat characterization and prediction." Naval Undersea Warfare Center NPT Tech. Rep. 11,548, Newport, Conn.: Naval Undersea Warfare Center, 90 pp.

portant breeding grounds for a number of species of pinnipeds (e.g., northern fur seals, harbor seals, northern elephant seals, and harbor seals). Year-round protection should be extended to Sanctuary waters, as well as to waters around San Nicholas and San Clemente Islands, given their importance as habitat for several marine mammal species, including a translocated population of sea otters (a Threatened species) at San Nicholas.

14. In short, important habitat in the southern California area should receive protection, particularly for species considered endangered or threatened, for those whose population size is known to be small, and for those, like beaked whales, that are known for their high susceptibility to harm from anthropogenic sound. This declaration is generally in agreement with recommendations recently made by the California Coastal Commission, and avoiding areas identified herein would help reduce impacts from acoustic sources.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed this 6th day of April 2007.

/s/ THOMAS A. JEFFERSON
THOMAS A. JEFFERSON, PH.D.

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Hearing Date: July 23, 2007
Time: 10:00 a.m.

DECLARATION OF CRAIG E. JOHNSON IN SUPPORT OF DEFENDANTS' OPPOSITION TO PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

I, CRAIG E. JOHNSON, National Marine Fisheries Service, National Coordinator for Interagency Consultation, do declare as follows

1. Since 1978, I have worked as a biologist for either the U.S. Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS) with specific responsibilities for conducting Endangered Species Act (ESA) section 7 consultations, writing biological opinions, or supervising biologists with those responsibili-

ties. I have been employed as a biologist in field offices in New York and Alaska (where I was responsible for conducting section 7 consultations and reviewing Corps of Engineers' permits), as the Chief of Endangered Species in the FWS' Twin Cities regional office (where I supervised the entire, regional endangered species program); and as the supervisor of the FWS' South Florida Ecosystem Office (where I supervised about 35 personnel who conducted an average of 2,000 consultations per year). In my 29-year tenure, I have been personally responsible for conducting several thousand section 7 consultations and associated biological opinions and have overseen, supervised, or approved several hundred other section 7 consultations and their associated biological opinions; these consultations have covered virtually every level of complexity, from U.S. Army Corps of Engineers' permits for family boat docks in Florida to the Federal Emergency Management Agency's National Flood Insurance Program. Because of my experience, I was one of the primary authors of the Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act (U.S. Fish and Wildlife Service and National Marine Fisheries Service 1998) and have taught basic and advanced courses on section 7 consultation to biologists and managers in both Services and other federal agencies for approximately 19 years.

2. In 1998, I was hired as the national Section 7 Coordinator for the National Marine Fisheries Service, where I have responsibility for the administration of NMFS' section 7 program, including advising the Director of the Office of Protected Resources on consultation issues, reviewing and editing biological opinions, provid-

ing guidance and training to regional and field personnel who are engaged in consultations, reviewing NMFS' regional section 7 programs coordinating with the FWS to ensure consistency between our respective consultation programs, and working with the headquarters' offices of other federal agencies on section 7 issues. As the senior consulting biologist within NMFS' Endangered Species Program, I have been responsible for working with regional and field personnel to complete most of the more controversial or more complex section 7 consultations and biological opinions (examples include a series of biological opinions on the ground fish fisheries in the Bering Sea, Aleutian Islands, and Gulf of Alaska; biological opinions on the Western Pacific Pelagic Fishery Management Plans; the Atlantic Highly Migratory Species Fishery Management Plan; biological opinions on the U.S. Navy's Surveillance Towed Array Sonar System, and a biological opinion on the U.S. Navy's Rim-of-the-Pacific training exercise in 2006).

3. In 2007, I worked with several other NMFS biologists on the section 7 consultation on the U.S. Navy's proposed Composite Training Unit Exercises and Joint Task Force Exercises which were proposed off Southern California from 2007 through 2009. This declaration documents the analytical framework and scientific methodology we used to produce the biological opinion and I have personal knowledge of the facts set forth herein. All statements and declarations made in this declaration are encompassed within the full administrative record for the biological opinion.

* * * * *

16. Our searches of the literature identified 70 mass stranding events involving beaked whales between

1960 and 2006; although this is almost twice the number of mass stranding events as the list published by the International Whaling Commission, it appears to be a minimum estimate. Our searches also produced reports of mass stranding events involved beaked whales and other whales that clearly pre-date the use of mid-frequency active sonar. Based on our review of these 70 reports of mass stranding events, 48 (68%) involved beaked whales and only three species of beaked whales have been involved in these mass stranding events: Cuvier's (41 mass stranding events) and de Blainville and Gervais' beaked whales (4 mass stranding events each) (Opinion at 102).

17. Our analyses of this larger number of mass stranding events involving beaked led us to conclude that these mass stranding events occur without beaked whales being exposed to active sonar (therefore, exposure to active sonar is not a necessary condition for those stranding events) and confirmed the conclusions of published studies which concluded that beaked whales do not appear to mass strand whenever or wherever they are exposed to active sonar. Similarly, our analyses of these 70 mass stranding events suggested that endangered whales do not appear to strand *en masse*, with the exception of killer whales and sperm whales, and we identified only one report of a mass stranding of killer whales (which occurred in New Zealand in 2004). None of these reports implicated active sonar in these stranding events. We summarized the results of these analyses in the final biological opinion on COMPTUEX/JTFEX (Opinion at 102—106).

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33. Our assessment of the impact of the environmental baseline on listed resources considered the potential effects of anthropogenic noise generally (Opinion at 79), shipping noise (Opinion at 80), deep-water ambient noise (Opinion at 80), and shallow-water ambient noise (Opinion at 80) in the biological opinion on COMPTUEX/JTFEX. Despite extensive searches of the best scientific and commercial data available, we did not identify specific data on shipping noise, deep-water ambient noise, and shallow-water ambient noise in the action area prevented us from conducting quantitative analyses of the probability of endangered species being exposed to these kinds of noise, their response to that potential exposure, or the consequences of those responses on the individuals thus exposed. Because we lacked specific quantitative information, we conducted more general qualitative analyses of the effects of these noise sources and potential interactions between these noise sources and mid-frequency active sonar.

34. Nevertheless, we were faced with evidence we could not ignore: although the Navy has conducted COMPTUEX/JTFEX exercises off southern California for decades, estimates of the number and density of endangered marine mammals in the action area suggest that their populations are stable or increasing. Although we recognized the uncertainty in these data, they represent the best scientific and commercial data available on these species. Because their numbers and density appears to be increasing, we infer that the individuals exposed to the suite of sound sources, including the mid-frequency active sonar associated with the Navy's training exercises in the area, have not had measurable effect on the fitness of the individuals in the action area.

35. We recognized the uncertainty in the data that was the basis for this inference, but it was the only inference the evidence before us during this consultation would support.

Pursuant to 28 U.S.C. § 1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed this 5th day of July, 2007, at

By: /s/ CRAIG E. JOHNSON
CRAIG E. JOHNSON
NATIONAL MARINE FISHERIES SERVICE

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Hearing Date: July 23, 2007
Time: 10:00 a.m.

Hon. Florence-Marie Cooper
U.S. District Judge

DECLARATION OF DR. DARLENE R. KETTEN IN SUPPORT OF DEFENDANT'S OPPOSITION TO PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

I, DR. DARLENE KETTEN, declare as follows:

I. BACKGROUND

1. I, Darlene R. Ketten, Ph.D., am a marine biologist and neuroanatomist who has worked for over 20 years on the anatomy, physiology and pathology of auditory systems and head and neck trauma. As detailed in my appended CV, I received a B.A. from Washington Uni-

versity (Biology and French, 1971), an M.S. from the Massachusetts Institute of Technology (M.I.T.) (Biological Oceanography, 1979), and a PH.D. from Johns Hopkins University (jointly awarded in neuroanatomy, behavioral ecology, and experimental radiology, 1984). I currently hold full, joint appointments as a Senior Scientist in the Biology Department of Woods Hole Oceanographic Institution and as Assistant Professor in Otology and Laryngology at Harvard Medical School and Massachusetts Eye and Ear Infirmary. For the current year (2007-2008), I have also been awarded a National Research Council Fellowship and am serving as a Senior Research Fellow in the Biophysics Division of the National Institutes of Health/National Institutes of Deafness and Other Communication Disorders (NIH/NIDCD). I serve also as a lecturer on inner ear and head and neck imaging and diagnostic radiology for specialty training courses for the American Medical Association - Head and Neck Surgery Division.

2. In addition to my basic research training, I completed post-doctoral work in the Research Laboratory of Electronics at M.I.T. (1985-86) and in the Eaton-Peabody Laboratory of Auditory Physiology of Mass. General Hospital (1985-1987). In the medical area, I have completed courses and received formal accreditation certificates in Neuroradiology and Neuropathology, Forensics and Forensic Pathology, and Veterinary Pathology, and Veterinary Pathology (1995-2004). In these courses I received specialty training in underwater physiology and explosive trauma in addition to training in professional autopsy procedures.

3. I am a full member of the Radiological Society of North America, the Society of Marine Mammalogy, the

Association for Research in Otolaryngology, the Sigma Xi Research Honor Society, the Association of Military Surgeons of the United States, and the Acoustical Society of America.

4. I was appointed as a Fellow of the Acoustical Society (2001) with a specific citation for contributions to the understanding of underwater hearing and marine mammal auditory system biology. I am also an active member of the ASA Bioacoustics Technical Committee and have served on federal advisory boards and panels on hearing, bioacoustics, acoustic trauma, marine mammal acoustics, and ocean noise for the National Institutes of Health, National Institutes of Deafness and Communication Disorders, NIH Consensus Development Conferences, the National Academy of Sciences, the Marine Mammal Commission, and NOAA/NMFS.

5. My research is primarily in auditory system modeling of hearing abilities and mechanisms of hearing loss, and I am a recognized expert in underwater hearing and explosive and acoustic trauma. As such, I have served as an expert witness and voting member of the United States of America (USA) on the NATO panel on Mediterranean strandings (Ketten 1998) and as an expert panel member for the German Government and European Union Commission panels for sound use in Antarctic waters (Ketten 2004). Of particular relevance to the above captioned litigation, I served as an alternate panel member for the recent Marine Mammal Commission FACA panel on Marine Mammals and Noise (2003-2006), was a voting panel member and co-author of the report for the Beaked Whale Workshop for NOAA and the Marine Mammal Commission (Cox *et al.* 2006), was a Section Leader and Investigatory Team prosecutor

and co-author of the Puget Sound/Shoup Incident Report for NOAA/Northwest Fisheries (Norman et al. 2005), was the co-author of reports for the International Whaling Commission on beaked whale hearing and noise impacts (IWC 2004), and served on the National Academy of Sciences/National Research Council expert panel on underwater noise and its effects (NRC 2003). I am the principal examiner requested by NOAA for head pathology and trauma analyses of beaked whales stranding in the Bahamas, Caribbean, and US East Coast waters for the last decade (Ketten 2005).

6. I am an author of over 40 peer reviewed scientific publications, 14 book chapters, and approximately 160 published abstracts or short communications, the majority of which deal specifically with marine mammal hearing and underwater sound. Clinically, I am the author of over 250 official case reports. The majority of these reports are assessments of pathologies related to hearing and head and neck trauma in marine mammals. In addition, as documented on the website www.whoi.edu/csi, as director of the research radiology facility, I have provided reports on radiologic examinations in over 1000 cases covering over 150 species, most of which are marine organisms.

7. I have been asked to comment whether the harm alleged by plaintiff and plaintiff's experts in its Preliminary Injunction (PI) request is scientifically supported.

8. My curriculum vita is attached to this declaration as Exhibit 1.

II. General Observations on Plaintiff's Expert Declarations

9. In preparing this declaration, I reviewed relevant parts of the Navy's more than 600 page Environmental Assessment/Overseas Environmental Assessment (EA/OEA) for the Joint Task Force Exercises (JTFEX) and Composite Training Unit Exercises (COMTPUEX) exercises as well as 168 pages of expert declarations for the plaintiff. All of the expert declarations provided by Plaintiff are by scientists and individuals who have experience primarily in the areas of field observations of behavior, ecology and population biology. Only one is provided by an anatomist, and none of the declarations are provided by an acknowledged expert in physiology, veterinary pathology, hearing, animal sound use, vocalization and communication behavior, or other fields related to sound production, reception, or sound impacts. Many of the comments contained in the expert declarations are based on fundamentally flawed presumptions about physiological and behavioral processes that are outside the scientists' areas of expertise or are unwarranted extrapolations that are not supported by current data. My declaration provides comments on areas within my disciplines in order to clarify issues raised by these declarations.

III. Specific Observations on Plaintiff's Expert Declarations and the "Bends" Theory

10. Dr. Bain is a respected expert on killer whale behavior, particularly for pods inhabiting Northwest coastal waters. His comments about stress responses and behaviors he observed rely on assumptions about sound exposures for which there is no available data. His note

indicates disturbances occurred from sources of 195 dB. Bain Dec. at 18. However, it is important to consider that source level per se is not significant.

11. Sound attenuates with distance, and the higher the source level, the farther a sound may spread under ideal conditions. High frequencies are corrupted more easily and attenuate faster than low frequencies, but all frequencies can be affected and further attenuated by intervening structures or physical conditions (seamounts, wave action, sediments, etc). What is most important is the received level at the animal in comparison to its sensitivity to the frequencies in the sound. Source level can only give you an estimate, under ideal conditions, for what a received level may be. It says nothing about the sound level actually received by the animal, which is a crucial determinant of impacts. At issue then, is the level of sound actually received by any animal. One other important fact should also be considered. The primary concern in the event on which Dr. Bain commented involved impacts to harbor porpoises from the transmissions by the Shoup and resulted in a major investigation of all animals stranding near that time frame. The official investigation report was unable to find any evidence of acoustic trauma in the animals examined (Norman *et al.* 2005) and found no differences in the carcasses that stranded both before and after the Shoup's transit.

12. Dr. Bain and many of the other plaintiff declarants state that "the bends" may occur from exposures to sound and disturbance. Bain Dec. at 19. In this case, he, like the other declarants, is relying on papers by two groups that initially proposed this idea, but there are multiple errors in the way the data on the presence of

bubbles were interpreted. At this point, there is no scientific evidence to support the "bends" theory. It is based largely on observations of bubbles (air emboli) noted in papers by Jepson *et al.* (2003, 2005) and Fernandez (2004). While these authors have experience in veterinary pathology, and their observations that they found bubbles are undoubtedly correct, they were overreaching to conclude that this observation indicates bends had occurred. Diagnosis of dive related or "the bends", which is also called decompression syndrome (DCS), requires the presence of several features that are lacking in the animals they examined (Brubakk and Neuman, 2002; Edmonds *et al.* 2002). The papers by Jepson *et al.* (2003, 2005) and Fernandez (2004) presumed that the presence of bubbles per se is a sufficient symptom to suggest occurrence of the bends. This is incorrect. Air bubbles in diving animals, including humans, are a common phenomenon (Jiang *et al.* 1994; Edmonds *et al.* 2002; Ferrigno 2004) and are not in themselves a dangerous condition. Post-diving, air normally comes out of solution, remains within the blood, travels via the usual routes to the lungs, and is released via respiration. The presence of bubbles in post-mortem animals and their observation in necropsies is most likely related to the cessation of normal off-gassing processes by the lungs being halted by death, causing the bubbles to "back-up" and gradually increase in number and size in other areas. Further, there are a great many other processes, including bacterial activity, chemical breakdown, and other diseases that produce air emboli (Spitz 1993; Cotran et al, 1999). Now that more people are aware of this concern, bubbles are being reported with increasing frequency in post-mortem marine mammals necropsies in animals for which there is no possibil-

ity of sonar exposure (pers. comm.; NOAA/ONR necropsy protocol workshop, Sept. 2006).

There are substantial flaws in the argument that marine mammals are suffering from bends or that the bubbles observed are sufficient and clear evidence of such a theory. (Piantadosi and Thalman, 2004, published rebuttal to Jepson *et al.* 2004). Bends, or decompression sickness (DCS), and its chronic cousin, dysbaric osteonecrosis (DON), are marked by tissues damaged as a result of bubbles being rapidly released in tissues that cannot accommodate them. The typical areas are fatty marrow in long bones (which whales lack), at joints, and in very acute cases, in the brain (Cotran, 1999; Spitz 1993; Resnick *et al.* 2002) (where they arrive via the broad carotids common in humans but again lacking in whales). DCS is a syndrome involving not just bubbles, but rather the presence of deleterious effects on other tissues and, therefore, requires that a suite of lesions and symptoms be present.

A key element in how this syndrome and its attendant pathologies occur is that the gases come from super-saturated tissues and are released and expand rapidly. The tissues are *super-saturated* because gases entered under pressure. In humans, this occurs most commonly in divers on SCUBA who are breathing air via tanks, under pressure, and at depth. Marine mammals are breath-hold divers and, therefore, are not consuming air in addition to that in their lungs at the ocean's surface. Although it is theoretically possible to saturate tissues on breath-hold dives, it has not been shown to happen in any marine mammal, and indeed there are many evolutionary adaptations that marine mammals have to impede such events, including the absence of

fatty marrow; small-bore, multi-branched carotid arteries, and an ability to maintain or lower arterial blood pressures while diving (Kooyman *et al.*, 1999) which decreases gas transfer rates, in contrast to humans who are susceptible to extraordinary spikes in arterial blood pressure at depth that actually facilitate the transfer of gasses to other tissues (hypertension values are reported as high as 300 mm Hg systolic and 200 mm Hg diastolic) (Ferrigno, 2004). There are extremely rare reports, specifically fewer than five, of human breath hold divers having DCS symptoms, including joint pain and neurologic symptoms, but those reports are all complicated by the presence of some aged individuals, individuals who supplemental their air while underwater, or who were also working in hyperbaric chambers (Amako *et al.*, 1974; Ferrigno 2004; Koshi *et al.* 2000).

13. Dr. Baird is a recognized expert in ecology and population studies and more then well qualified to comment on those areas. His declaration notes RIMPAC 2006 exercise. It is important to recall also that no beachings occurred during that exercise. It is also important to note that sonar use was previously implicated in a congregating of melon-headed whales (*Peponocephala electra*) coincident with the RIMPAC 2004 exercises, but it has since been found (Jefferson *et al.*, 2006) that this is likely to have been a seasonal phenomenon and was not related to the exercises in any way since similar aggregations of the same species occurred simultaneously in far distant regions of the world. This underscores the complexity of such events as well as the necessity of avoiding precipitous conclusions from minimal observations. Dr. Baird correctly states that sonar related strandings have occurred uniquely with beaked whales. However, he goes on to make the assertion that the

physical trauma and pathologies in the stranded whales was a direct result of exposures to sound and explicitly to sounds at levels lower than expected to induce trauma. Baird Dec. at 11. There is no data to support that conclusion, including the cited reference, Cox, *et al.* 2006. Like Dr. Baird, I participated in the meeting and am a co-author on the reference he cites. Although we did agree that the bends theory requires investigation, we did not advocate its adoption as a likely mechanism and, as the document states, proposed that multiple lines of investigation on several alternative theories were warranted. The bends theory, without adequate evidence, assumes that stranded beaked whales may have been at risk from being deep divers and "surfacing excessively fast". What is overlooked is the fact that in breath-hold diving, absolute depth dived past the depth of lung collapse is irrelevant. Lung collapse is believed to occur near 70 meters, which is far shallower than beaked whales normally dive. How fast they surface from great depths is not a relevant feature. Further, there are no observations from any of the beaked whale strandings regarding the swimming behaviors in these whales and thus no data to suggest that they are surfacing rapidly.

14. Dr. Jefferson is a respected fisheries and population biologist. In his declaration, he asserts that bubbles in the blood are related to the death of stranded whales, Jefferson Dec. at 4, As noted above in paragraphs 12 and 13, the available data do not support that conclusion. As previously discussed, Jepson *et al.* and Fernandez found bubbles which they incompletely analyzed and improperly asserted were related to DCS with no corroborating symptomology. In fact, the comprehensive

reports on the recent beaked whale strandings from the Bahamas and Canary Islands (Evans *et al.* 2001; Fernandez, 2004; Ketten, 2005); clearly demonstrate that the animals symptoms are most consistent with stranding induced stress and hyperthermia as the cause of death. The most common and significant findings across all these strandings is not that of bubbles but rather heat stress, myocardial stress, and shock. A key question that remains unanswered and that further belies the theory that this is a sound and dive related phenomenon is why are the stranding animals in every one of these cases only beaked whales? Why is there not a representative mix of the myriad of the other species present in these areas, particularly those with similar hearing abilities? Clearly this is a complex event that likely entails multiple features and some special, highly species dependent phenomenon that we do not yet understand. It raises the possibility that this is not a direct sound dependent phenomenon at all, but rather a physiologic fragility specific to beaked whales and to a particular and rare interplay of the movement of ships within the location of these whales and the ocean topography. What we can say at this point is that these events have, fortunately, been extremely rare, that they have a—now—predictable pattern that will allow us to better define what habitats and species groupings to avoid, and that there is no evidence that this is a broadly hazardous or global phenomenon.

15. Dr. Parsons is a cetacean ecologist with broad experience and has worked extensively with the International Whaling Commission on population studies. He raises a concern that sound levels quoted in the Navy's Environmental Assessment are well above those that

are likely to have been received by the stranded beaked whales. Parsons Dec. at 4. His declaration suggests that the received sound level was the causative agent of the beaked whale strandings in the documented strandings in Greece, Bahamas, and the Canary Islands. There is no data to support the assertion that sound pressure level was a key factor in these strandings. Dr. Parsons also states that a DCS-type mechanism is a likely cause of the standings. Parsons Dec. at 5. As noted in paragraphs 12, 13, and 14 of my declaration, there is no scientific evidence to support the bends theory and substantial counterarguments against it.

16. Dr. Rommel is a recognized and admired anatomist. His declaration presents a lucid and authoritative description of the pathologies and related events in the cited beaked whale strandings. Dr. Rommel references the "bends" theory as well, and also suggests that the described findings are in some way potentially consistent with explosive trauma. Rommel Dec. at 7. The latter is unequivocally incorrect. The pathologies observed are not consistent with a blast event, and none of the classic blast symptoms are present (Spitz, 1993). He correctly notes that the reported gas emboli could have had severe consequences, but fails to acknowledge that there is no evidence that any of the gas emboli were present *in vivo* or were even a peri-mortem phenomenon. There is good reason to believe, as explained in paragraph 12, that the gas emboli are the result of post-mortem events. There is no evidence to support Dr. Rommel's claim that the gas emboli occurred at sea nor that the most consistent mechanism is acute bubble growth promulgated by sound impacts. Rommel Dec. at 9. Dr. Rommel comments that acute bubble growth is

particularly plausible by experts, based on the Cox *et al.* (2006) publication, and on the events of the related meeting. In Cox *et al.* (2006) it is acknowledged that such mechanisms have been proposed theoretically and ought to be pursued experimentally in order to assure all avenues are investigated but, that at present, there is no evidence to support the idea that this can occur except under highly experimental conditions employing immense pressure coupled with megahertz range frequencies. Experts in dive physiology do not believe this position, like the speculation of resonance effects, has any foundation under real conditions (Cox *et al.*, 2006; Piantadosi and Thalman, 2004). It is also worth noting that very recent work by Popper *et al.* (2007) on smaller species of fish, which should be even more susceptible to bubble growth induced tissue damage, found no auditory or non-auditory tissue damage from high intensity sound from a sonar source.

17. Dr. Weilgart is an experienced field biologist working closely with her husband and colleague, Dr. Whitehead, for many years on both sperm whales and beaked whales in the North Atlantic waters. She states that the marine mammals involved in previous stranding events are underestimated based on her assumption that carcasses sink. Weilgart at 7. To the contrary, typically, post-mortem bodies initially sink, then refloat, and finally sink again after substantial deterioration (Spitz, 1993). The timeline of this process will vary depending primarily upon water temperature as well as other factors such as gut content, amount of body fat, etc., that affect bacterial and other decomposition processes, but generally refloating occurs within a few days while final sinking may require, for a large whale, several weeks.

Considering the intense scrutiny of the geographic areas near stranding events, the claims that whale carcasses in any significant number would have been missed is unreasonable and not scientifically supported. It is also inaccurate to claim that sonar itself severely injures or kills whales. This comment fails to consider that many sonars at a range of frequencies, including shipping, recreational, fisheries and military sonars, have been in use effectively daily across many oceans for decades without evidence of increased strandings or any evidence of lethal or even severe acoustic trauma. It is correct to comment that sonar exercises have been linked to strandings but it is extremely important that these events be properly assessed in terms of their relative rarity and the precise species (beaked whales) and number of animals affected (approximately 250 over 40 years) as well as their locations and other physical factors crucial to understanding the events (Evans and England, 2001). To assume that sound was the direct and sole cause of the deaths in these cases may lead us to the wrong conclusion and prevent finding the correct solution. Dr. Weilgart's concern about bubble growth in the tissues of marine mammals is addressed in paragraphs 12, 13, and 14.

18. Dr. Whitehead is an experienced and expert field observer, particularly in beaked whale distributions. His reference to beaked whale resightings in the Bahamas area since the Bahamas Stranding - Whitehead Dec. at 8 - fails to provide comparison rates for the years preceding the event. Without consideration of this data, it is impossible to accept his conclusion or his subsequent claims which depend upon an undocumented assumption of habitat disruption and abandonment.

19. Dr. Woodwell has a substantial career documented in ecology. However, there is no data to support his comment that sonar has the capacity to "sterilize"large areas of the ocean. Woodwell Dec at 4. To the contrary, as documented in the other declarations, there are abundant and thriving populations in the immediate vicinity of a number of military and naval establishments. Concerning the comment that marine mammals have a low sound energy tolerance, it should be noted that source levels of sounds produced by marine mammals in many cases exceed 180 dB (Ketten, 2000). As noted in paragraph 16, there is also the recent data of Popper *et al.* (2007) that clearly documents the sound tolerances of fish to sonar signals. Essentially, my concern is that while we should be concerned that we employ sounds responsibly we must not conflate concern with an assumption that harm has or will occur. Sound is also a valuable tool. If we limit its use without substantive reasons, we may be abandoning its substantial potential for aiding conservation and adding to our knowledge of the oceans and ocean life.

Pursuant to 28 U.S.C. §1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on the 6th day of July, 2007 at Bethesda, Maryland.

By: /s/ DARLENE R. KETTEN
DR. DARLENE R. KETTEN, Ph.D.

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Hearing Date: July 23, 2007
Time: 10:00 a.m.

Hon. Florence-Marie Cooper
U.S. District Judge

DECLARATION OF CAPTAIN MARTIN N. MAY IN SUPPORT OF DEFENDANTS' OPPOSITION TO PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

I, Captain Martin N. May, U.S. Navy, Assistant Chief of Staff for Training and Readiness (J7), U.S. THIRD Fleet, do hereby declare as follows:

I. BACKGROUND

1. I graduated from Indiana University, Bloomington in August 1982 with a Bachelors Degree in biology and

received a commission from Aviation Officer Candidate School (AOCS) in January 1983. I also have a Master of Arts degree in National Security and Strategic Studies from the Naval War College, Newport, Rhode Island.

2. My operational assignments began in March 1985 when I reported to Carrier Airborne Early Warning ONE TWO SIX (VAW-126), making two deployments aboard USS John F. Kennedy (JFK/CV 67) to the Mediterranean Sea and establishing air warfare expertise in Command and Control (C2) across all warfare areas. In January 1991, as Carrier Air Wing THREE (CVW-3) Landing Signals Officer (LSO) and Administration Officer, I deployed to the Arabian Gulf during OPERATION DESERT STORM aboard JFK/CV 67. In October 1994, I returned to VAW-126 as a Department Head and served as the Maintenance Officer deploying to the Mediterranean Sea and Arabian Gulf aboard USS Dwight D. Eisenhower (CVN 69). In November of 1997, I served as Executive Officer of VAW-113 and later served as Commanding Officer from September 1999 to November 2000 and made two deployments to the Western Pacific and Arabian Gulf. I served as Deputy Commander (DCAG) of Carrier Air Wing FOURTEEN (CVW-14) from November to December 2000. From December 2000 to January 2003, I served on Carrier Strike Group ONE (CCG-1) staff as the Combat Direction Center, Task Force Command Center (CDC/TFCC) and Air Defense Officer. I served as Assistant Chief of Staff for Operations and Plans at Strike Force Training Pacific from June 2005 to June 2007.

3. My shore assignments include tours serving as a Flight Instructor and LSO at VAW-120 Fleet Replacement Squadron from July 1988 to January 1991. I

served as Atlantic Fleet Forces LSO and Officer-in-Charge of the U.S. Navy LSO School from January 1993 to June 1994. In October 1996, I reported as a student at the Naval War College, Newport, R.I. and earned a Masters of Arts degree. I served at Tactical Training Group Pacific as the Air Defense Syndicate Head and Instructor from January 2003 to January 2005. In June 2007, I reported to Commander, U.S. THIRD Fleet to relieve Captain Gregory F. Labuda, U.S. Navy as the Assistant Chief of Staff for Training & Readiness (J7) and currently serve in that billet.

II TRAINING REQUIREMENT

4. The Navy's primary mission is to man, train, equip, maintain, and operate combat-ready naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas. Training with complex operating and weapons systems of submarines, surface ships, and aircraft in realistic combat conditions while employing potential threat scenarios is key to maintaining fleet combat readiness and survival in actual wartime conditions.

5. Section 5062 of Title 10 of the U.S. Code mandates that the Chief of Naval Operations (CNO) organize, train, and equip all naval forces for combat. We accomplish this requirement through an arduous training cycle that ensures our forces achieve and maintain the highest possible readiness levels prior to deployment. This mandate is fulfilled by conducting at-sea training activities during a pre-deployment training cycle. The Fleet Response Training Plan (FRTP) is a rigorous training protocol designed to ensure that Servicemembers build the skills that they will need to safeguard themselves,

their shipmates and allies, and to be effective in combat and in other real world operations prior to their deployment. The FRTP, designed to ensure combat ready naval forces, consists of four major phases: maintenance, initial or basic unit level training, integration training, and sustainment phase. A "strike group" trains throughout the FRTP, conducting either unit level or integrated training, and is identified as either a carrier strike group (CSG) or an expeditionary strike group (ESG). The CSG generally consists of 6 units: an aircraft carrier, and five surface combatants. Training workups for deployment include exercising with an attack submarine and a combined ammunition, oiler, and supply ship. The ESG is a relatively new naval organizational structure having been established in 2003 as part of ongoing transformation processes in the Navy. The ESG includes surface combatant ships and an amphibious ready group (Amphibious Assault ship and Transport Dock ship, Dock Landing ship, and various Marine units). During this pre-deployment training cycle, the strike group develops the skills and abilities necessary to carry out a wide range of possible tasks, ranging from major combat operations associated with full-scale armed conflict to non-combatant evacuation operations and humanitarian assistance. All are premised on the ability of the strike group units, which are considered sovereign U.S. territory, to defend themselves against threats, including submarines. They are also premised on the strike group's ability to detect and classify any and all circumstances that may jeopardize the safety of the people and ships comprising that strike group. They must be trained and capable of maintaining awareness of and control of the air, surface and subsurface space surrounding them at all times.

III. DESCRIPTION OF THE TRAINING EXERCISES

6. A strike group starts developing skill sets at the individual ship, submarine, or aviation squadron level by conducting unit level training. For example, a ship's Commanding Officer trains his/her unit to maintain and develop the basic skills the Navy requires during that phase of training. As skill-levels increase, units coordinate training with other units. During the integration and sustainment training phase, major exercises are conducted encompassing ranges and facilities throughout the southwestern United States. During the integration phase, the individual unit learns and demonstrates skills as a team member of the strike group during a Composite Training Unit Exercise (COMPTUEX). The COMPTUEX is largely scripted to ensure that specific events occur during the approximately 3-4 week exercise. It requires not only that individual units demonstrate basic skills, but that those skills become integrated into a composite strike group team capable of operating in a complicated threat-based scenario environment that simulates real world situations. Anticipated real world situations require the ability to identify and defeat multiple threats including surface, air and, most importantly, submarines.

7. Joint Tactical Force Exercise (JTFEX) lasts approximately 10 days and also occurs in the Integration Phase of the FRTP. It is a scenario-driven, at-sea training exercise designed to evaluate Strike Group preparedness in a joint and coalition environment for deployed contingency[1] and combat operations. This means

[1] A contingency means a military operation that is either designated by the Secretary of Defense as a contingency operation or becomes a contingency operation as a matter of law (10 United States Code (USC)

that the strike group possesses the necessary capabilities and skills to carry out tasking while deployed overseas and assigned to combatant commanders including Central Command (responsible for conducting Operation Iraqi Freedom and Operation Enduring Freedom in Afghanistan) and Pacific Command (responsible for operations throughout the Pacific Ocean). JTFEX follows COMPTUEX and is a scripted scenario-driven exercise that requires adaptive mission planning by participating naval forces and operational staffs. JTFEX typically includes other Department of Defense services and/or Allied Forces. The strike group is presented with a threat-driven scenario involving multiple threats that require advanced target-identification and adherence to rules of engagement (ROE).[2] The focus of JTFEX is on mission planning and strategy and on the orchestration of integrated maneuvers, communication and coordination. JTFEX utilizes a simulated (mock)

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§ 101(a)(13)). It is a military operation that: (a) is designated by the Secretary of Defense as an operation in which members of the Armed Forces are or may become involved in military actions, operations, or hostilities against an enemy of the United States or against an opposing force; or (b) is created by definition of law. Under 10 U.S.C. § 101 (a)(13)(B), a contingency operation exists if a military operation results in the (1) callup to (or retention on) active duty of members of the uniformed Services under certain enumerated statutes (10 U.S.C. § 688, 12301(a), 12302, 12304, 12305, 12406, or 331-335); and (2) the callup to (or retention on) active duty of members of the uniformed Services under other (non-enumerated) statutes during war or national emergency declared by the President or Congress.

[2] Generally, Rules of Engagement (ROE) are directives issued by competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered (Joint Publication 1-02). Further, ROE determine when, where and how force shall be used and such rules are both general and specific.

opposition force (OPFOR) and serves as the venue for U.S. THIRD Fleet to assess the readiness, interoperability, and proficiency of naval forces in realistic, free-play scenarios, spanning the spectrum of armed conflict.[3] As the final certification event prior to deployment, the strike group must demonstrate the ability to operate and integrate in a Joint/Coalition Operations Area under simulated hostile conditions in order to test the full range of ROE. At the conclusion of the COMPTUEX and JTFEX, Commander, U.S. THIRD Fleet certifies to Commander, U.S. Pacific Fleet the readiness

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[3] As Naval Doctrine Publication 1 explains, "Under international law, nations have a right to use force for individual or collective self-defense against armed attack, and to help each other in maintaining internal order against insurgency, terrorism, and other threats. Naval forces operating under the direction of the National Command Authorities and unified commanders implement this international right to:

- Conduct contingency operations.
- Evacuate noncombatant personnel.
- Combat terrorism.
- Aid host nations through security assistance and foreign internal defense.
- Assist other nations in defending themselves.
- Enforce United Nations' economic sanctions.
- Participate in peace-support operations.
- Intercept vessels to prevent uncontrolled immigration.
- Plan and conduct disaster relief, humanitarian assistance, and civil support operations.
- Coordinate public health operations.
- Assist interagency counterdrug operations.

Naval forces are organized, trained, and equipped to defend our nation and its interests. We defend our nation by maintaining a visible and credible capability both to fight and to take that fight abroad. Application of our expertise in operations other than war also exercises many of our wartime capabilities and contributes to the defense of our nation by promoting an orderly world environment."

of the CSG or ESG to deploy, fulfilling the Navy's Title 10 responsibilities. A critical portion of this certification is the strike group demonstrating the ability to execute anti-submarine warfare since history has consistently proven that the enemy's strategy with submarines is to interdict its opposition before it can affect the fight. The next COMPTUEX, which will be for an ESG, is scheduled to commence in September 2007. CSGs/ESGs that conduct pre-deployment training in SOCAL OPAREAS typically deploy to the PACOM or CENTCOM areas of responsibility (AORs). A COMPTUEX and JTFEX for the BONHOMME RICHARD ESG and a JTFEX for the NIMITZ CSG were conducted in February and March 2007.

IV. DESCRIPTION OF SONAR

8. Sonar used to locate and track submarines falls into two categories, passive and active sonar. Passive sonar listens for noise made by the target submarine. Active sonar places acoustic energy into the water and then listens for a return after the sound bounces off the target submarine.

9. Active sonar systems generally fall into three categories: (1) low frequency (between 0.1 kHz and 1.0 kHz) (LFA); (2) mid-frequency (between 1.0 kHz and 10.0 kHz)(MFA); and (3) high frequency (greater than 10.0 kHz)(HF). Various ASW training evolutions have shown that the use of active sonar is absolutely necessary in order to find, track and prosecute or hold at risk

today's modern and extremely quiet submarines.[4] As submarines become quieter due to improved technology, the usefulness of passive sonar systems greatly diminishes. Reconstruction data from multiple ASW exercises has proven that use of MFA sonar, in the right environments, has greater potential in assuring more valid and accurate acoustic contacts of a submarine-at greater distances—than use of passive systems against the more advanced modern submarine. Detecting a submarine at the maximum range is critically important in order to prevent an adversary submarine from penetrating the "vital area" without first being detected. The vital area is defined as the area most critical in defending our high value units (aircraft carriers, logistic ships). Its size is determined in large part by the adversary's ability to conduct attacks on our high value units based on its operational weapons range.

10. The primary target of adversary submarines is the U.S. Navy aircraft carrier, which typically carries over 5,300 U.S. Servicemen, women and civilians. The submarine, with its stealth capability and effective weapons systems, creates great risk to the survivability of the aircraft carrier and other afloat naval assets. MFA sonar is the best tool to detect a submerged submarine prior to it penetrating the vital area. To be effective, however, MFA sonar must be used for training; it cannot simply be kept "on the shelf" in the event our forces need to use it in a real contingency. Personnel using MFA sonar must train with it regularly, under realistic conditions and in a variety of situations. Denying or

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[4] The term "hold at risk" means to deny enemy submarines an offensive capability by maintaining the ability to destroy them, if and when required, at a time and place of our choosing.

limiting the Navy's ability to train with MFA sonar under realistic conditions impacts real-world military readiness because it means that Servicemen and women will be less adept at using the best tool that they have available to them against a submarine threat. Diminished military readiness has a direct impact on national security and places U.S. forces that are already in harms way at increased risk.

V. IMPORTANCE OF ASW

11. Improving anti-submarine warfare is the Pacific Fleet's top warfighting priority because of the proliferation of extremely quiet diesel electric submarines throughout the world; including the western Pacific and the Middle East, and the threat they impose to our ability to maintain access through the sea lines of communication. Given the sheer size of the Pacific, naval presence is absolutely critical in this predominantly maritime environment. Inability to establish or maintain this presence because anti-submarine warfare skills are inadequate is simply unacceptable and risks significant harm to the United States foreign policy and national security.

12. The U.S. Navy must continually prepare for and ensure its people are trained and equipped to mitigate increasing threats to national security. As weapon systems evolve, so too must the abilities of our Servicemembers and their equipment advance. The global proliferation of diesel electric submarines poses significant challenges to our naval forces. Diesel-electric submarines are operated by numerous navies, including potential adversaries in the Asia-Pacific and Middle East areas of

responsibility. Naval forces are routinely deployed to these high threat areas.

VI. TRAINING WITH MID-FREQUENCY ACTIVE SONAR

13. Critical skill sets associated with a COMPTUEX or JTFEX involving MFA sonar include ASW training exercises. ASW exercises provide crews of submarines, ships, aircraft, and helicopters with crucial experience in locating, tracking and attacking submarines or submarine-like mobile underwater targets. Exercise tasks include responding rapidly and decisively to enemy submarine contacts; employing sensors and weapons to neutralize the target; and providing commanders with a common tactical picture of the undersea battlespace.

14. ASW exercise training is a critical part of the advanced, coordinated at-sea operations conducted during JTFEX. This training integrates the full ASW continuum from detecting and tracking a submarine to attacking a target using either exercise torpedoes or simulated weapons. Detecting and holding track on a submarine is a complex strike group or surface action group task mainly because of the technical limitations of our sensors and the challenges associated with the ocean medium in which we search. Adding to the level of difficulty is the fact new submarines are quieter, especially the diesel-electric type. To find slow- moving, quiet submarines, active sonar is vital to achieving the success of the mission and survivability of our forces. It is important to understand that diesel-electric submarine tactics include operation in shallow coastal waters where ambient noise levels are at their highest and where the subsurface marine environment is most complex, thus minimiz-

ing passive sonar detection capability. Therefore, training in such a marine environment and against adversary tactics in order to hone ASW skills is indispensable.

15. Submarine Operations (SUBOPS) train submarine crews in the use of sonar systems to search for and track surface ships and submarines, responding to simulated attacks using evasive maneuvering and countermeasures in deep and shallow waters, and to avoid detection by ASW systems. The submarine uses passive sonar almost exclusively to remain covert and stealthy. The exercise may include the firing of several exercise torpedoes on the instrumented underwater tracking range in Southern California. A single submarine event may last up to 5 days, but multiple submarine operations occur throughout COMPTUEX and the follow-on JTFEX.

16. Strike Group Tracking Exercises (TRACKEX) test the ability to locate and track an unknown or hostile submarine over a predetermined time period. The TRACKEX is part of COMPTUEX and trains strike groups to coordinate positioning of assets (surface, air, and subsurface) and to ensure effective communication and turnover of responsibility for maintaining coverage of the unknown submarine, which could attack at any given moment. These exercises typically last 8 hours and occur in the established Southern California traditional operating areas and ranges.

17. Maritime Patrol Aircraft (MPA) operations as part of a COMPTUEX or JTFEX utilize P-3C Orion aircraft conducting general search, localization, identification and tracking operations throughout the area where COMPTUEX and JTFEX exercises are being conducted offshore in Southern California. P-3C Orion aircraft

typically fly at lower altitudes and are capable of remaining on station for extended periods of time. Due to the many sensors onboard, the aircraft are capable of performing a variety of missions, including ASW, and function well as a reconnaissance platform. Additionally, they serve as a deterrent to potentially offensive submarines (putting them in a defensive or "at risk" posture), since enemy submarines can detect the noise of such aircraft with onboard sensors.

18. While the types of events associated with the use of MFA sonar remain relatively consistent from one COMPTUEX to another or from one JTFEX to another, the actual number of hours that MFA sonar is employed can change considerably. Specifically, the tactical decision to use MFA sonar is left to the discretion of the commander and his subordinate warfighters. The decision to use MFA sonar is a product of the tactics required to accomplish assigned missions as well as the environmental conditions. Tactics can vary significantly depending on the threat and actions of the potential enemy, and its associated tactics.

VII. PROLIFERATION OF DIESEL-ELECTRIC SUBMARINES

19. Modern, quiet submarines—operated by navies across the world—pose the primary threat to naval access to the littorals, control of strategic maritime chokepoints[*], transit through international straits, and protec-

[*] A chokepoint is a strategic strait or canal which could be closed or blocked to stop sea traffic. There are approximately 200 straits (narrow bodies of water connecting two larger bodies of water) or canals around the world but only a handful are known as chokepoints. While relatively few in number, the high volume of international commerce and naval

tion of sea lines of communication vital to international commerce. A single submarine can effectively deny U.S. naval forces access to large maritime areas necessary to conduct operations, as well as closing sea lines of communication. Being able to identify, locate, track and if necessary, prosecute or hold modern quiet submarines at risk is vitally important to our ability to conduct operations and accomplish our mission.

20. Potential adversary nations are investing heavily in submarine technology. In addition to the United States, Japan, India, Australia, Canada, and the United Kingdom, 41 other countries, including China, North Korea, and Iran have modern submarines. Of the 380 submarines owned by these 41 countries, more than 300 are diesel-electric submarines. The extremely low levels of noise emitted by diesel-electric submarines defeat the best available passive sonar technology. A diesel-electric submarine operating on battery power is nearly undetectable to U.S. and allied naval forces without the use of MFA sonar. Inability to detect a hostile submarine at long-range, i.e., outside the operational launch limits of a missile or torpedo, is a critical vulnerability that places our Servicemembers and units at extreme risk. ASW exercises involving OPFOR diesel-electric submarines have proven that our forces, using passive sonars, have great difficulty detecting this submarine outside its weapons ranges. The proliferation of diesel-electric submarines makes the detection capability offered by MFA sonar absolutely mission-critical. Vulnerability to the threat of modern submarines jeopardizes the ability of the United States Navy and the navies of our allies to

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vessels moving through these chokepoints makes them strategically important to the United States.

successfully conduct the full spectrum of defensive and offensive operations.

21. Like "above-surface" weather patterns, the subsurface marine environment is an extremely complicated place to conduct operations due to changes in water density, temperature, salinity, currents, above-surface weather conditions, and the profile of the ocean bottom. The combinations of conditions are infinite. Sound propagation in the same area can change with a change in any or a combination of the previously mentioned variables in a very short amount of time. Different conditions change the manner in which energy moves through the water volume. Utilizing active sonar is the most effective means of detecting diesel-electric submarines in this dynamic environment. The U.S. Navy must train intensively to develop and maintain the skills necessary to counter the threat. The skills and knowledge developed in ASW training, including proficiency in mid-frequency active sonar operation, are highly perishable and must be continuously reinforced in order to respond effectively.

VIII. UNACCEPTABLE TRAINING ALTERNATIVES

22. Sonar operators and crews must train regularly and frequently to develop the skills necessary to master the art and processes of identifying submarines in the complex subsurface environment. They cannot reliably simulate this training through computer technology because the actual marine environment is simply too complex and the technological challenges to recreate those conditions are similar to developing the super-computer models used by meteorologists to simulate above-surface weather patterns and characteristics. While classroom

training and computer simulations are valuable methods for basic, operator-level sonar training, they are not near-term or cost-effective substitutes for real-time, at-sea training using actual conditions the U.S. Navy and its allies would encounter in actual combat operations.

23. Not only are simulators unable to adequately recreate the complexity of the real-world physical environment, they do not develop the ship-wide and strike-group-wide teamwork necessary to execute modern, coordinated, integrated ASW tactics as well as the other strike warfare capabilities for which they must maintain proficiency. Computer simulation is adequate for some of the initial training of new sonar technicians in the basics of sonar equipment familiarization and operating characteristics; however, it will not, in the foreseeable future, replace real-world training. Furthermore, computer simulation cannot replicate the complexities of conducting ASW operations with other ships operating MFA sonar, defending the air space from aircraft firing missiles targeted at an aircraft carrier or amphibious ships, or defending against other surface combatants. Therefore, total simulation is not an effective replacement for live training with MFA sonar. In short, expecting naval forces to effectively counter the modern diesel-electric submarine threat without training with MFA sonar would be akin to expecting a commercial pilot to safely accomplish a passenger flight having never flown an actual aircraft in real-world weather conditions.

24. Sole reliance on simulation would deny Navy strike groups the training benefit and opportunity to derive critical lessons learned in the employment of MFA sonar in the following specific areas:

- Sound reducing clutter from bottom topography and a myriad of other environmental conditions (fish, current interactions, etc.);
- Interference from merchant shipping and mutual sonar operating in the area;
- Interplay between ship and submarine targets; and
- Interplay between ASW teams in the strike group.

25. Although COMPTUEX and JTFEX stress ASW training, all other warfare areas must also be exercised and evaluated. The ranges that comprise the Southern California Operating Area make up a unique area in which strike groups can meet all required training objectives at the same time. Another significant factor is that many of the operating areas have been surveyed and closely mirror the prospective operating environments in many of the world's "hot" spots where U.S. Naval forces may be required to fight. Conducting live training with MFA sonar in our own littorals is thus necessary to replicate the conditions expected in many overseas areas in which U.S. Navy forces could operate in harms way, while also building proficiency and experience in our own waters should the enemy attempt to interdict U.S. forces deploying to the area of conflict. Further, like any other combat skill or art, employment of MFA sonar is a perishable skill that must be exercised in a realistic and integrated manner in order to maintain proficiency. Eliminating or disrupting the use of MFA sonar during the training cycle would cause ASW skills to atrophy and thus expose U.S. Naval forces

to unacceptable risks during real-world combat operations.

IX. IMPACT TO TRAINING IF MFA SONAR USE IS ENJOINED

26. The impacts of prohibiting utilization of MFA sonar during the scheduled training and work-up cycles are profound. Precluding the ability to use MFA sonar in COMPTUEX/JTFEX events/exercises would effectively eliminate the training that is required and necessary for strike groups to be certified to deploy to the western Pacific or the Middle East. If a strike group were not able to train with MFA sonar, U.S. THIRD Fleet would have no basis to objectively identify sub-standard performance and gauge the Fleet's ability to employ integrated ASW tactics with active sonar. Integrated ASW requires use of both active and passive systems in order to defeat a submarine threat. Further, use of MFA sonar must be exercised in an integrated manner with shipboard passive systems, sonar buoys, aircraft-employed dipping sonar, magnetic anomaly detection systems, and other ASW detection tools, in order for the strike group to maintain adequate proficiency in the employment of integrated ASW. Additionally, the omission of ASW events within the COMPTUEX or JTFEX exercise would have ripple effects throughout the entire exercise that would undermine the training and coordination goals for the exercise. Without active sonar, all ASW events that are not canceled would utilize passive sonar or non-acoustic sensors, significantly reducing the quality and realism of these training events due to the loss of the key capability that MFA sonar provides our operational forces. To train without using MFA sonar is

the antithesis of the Navy maxim "We train as we will fight, so that we will fight as we have trained."

27. Moreover, denying or restricting the ability to train to required proficiency levels with MFA sonar would result in the effective loss of a critical sensor that Navy Servicemembers need when engaged in an undersea fight. The inability to use MFA sonar effectively in combat due to inadequate training places U.S. Navy aircraft carriers at an unacceptable risk of submarine attack and, in turn, risks the lives of the thousands of Servicemembers who serve on board those carriers.

28. The submarine threat possesses stealth capabilities that are best exploited with the use of MFA sonar. To compensate for the loss of MFA sonar and make it possible to locate submarines during training, our submarines would have to intentionally simulate much less sophisticated submarine threats, making the expense and risks of such training impractical and, ultimately, far less effective than our current training methods.

29. Delaying or precluding a JTFEX or COMPTUEX will impact the training cycle identified by the combatant commanders and may force combatant commanders to reevaluate their pre-planned schedule for relief of the strike groups currently on station and deployed overseas, which would cause a significant ripple effect in the global management of U.S. strategic forces. The undesirable and potentially unsafe or hazardous alternative would be to continue deploying strike groups on their current timeline, but lacking the basic proficiency and skills necessary to execute this critical ASW mission. By doing this, thousands of Sailors and Marines aboard the ships and submarines lacking the ASW proficiency

to be gained from MFA sonar use during JTFEX and COMPTUEX events would be put into threatening operational environments with limited skill and training, creating the potential for a deadly situation. In the alternative, combatant commanders weighing the risks may be required to retain deployed forces on station and overseas until they are relieved by strike groups with the requisite proficiency and skills. The delaying of a single COMPTUEX or JTFEX exercise will impact not just the CSG or ESG scheduled to participate in that exercise but a significant portion of the Navy Training Plan and deployment schedule of the entire Navy Fleet.

30. Training with MFA sonar is critical to national security. The ability of our Servicemembers to defend themselves and others will be seriously jeopardized if the Navy is prevented from training with MFA sonar. The ability to operate MFA sonar is a highly perishable skill and can not be adequately accomplished or validated using simulators. Without proficiency in MFA sonar operation, U.S. Navy ships will not be able to detect, identify, and track submarines. If strike groups are not permitted to train with MFA sonar prior to deployment, warfighters will be non-proficient in the use of their most effective tool. Deploying a strike group that has not developed and demonstrated the necessary anti-submarine warfare skills with MFA sonar presents extreme risk to its basic ability to defend itself and to execute critical mission tasking of our combatant commanders.

Pursuant to 28 U.S.C. §1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed on the 3rd day of July, 2007 at San Diego, California.

By: /s/ MARTIN N. MAY
MARTIN N. MAY
CAPT, U. S. NAVY

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. TBD

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF EDWARD C.M. PARSON IN SUPPORT OF PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

I, EDWARD C.M. PARSONS, declare the following:

1. This Declaration is submitted in support of Plaintiffs' motion for a preliminary injunction. The statements contained in this Declaration are true and correct to the best of my knowledge and, in the case of my opinions, I believe them to be true. If called as a witness, I could and would testify competently to the statements contained herein.

2. I received my B.A. and MA. degrees from Oxford University in 1991 md 1995, respectively, and my Ph.D. from the University of Hong Kong in 1998. My Oxford degrees were in Zoology and my Ph.D. on the biology, ecology and conservation of cetaceans. I have been engaged in cetacean research for over 14 years, and am currently an Assistant Professor in the Department of Environmental Science and Policy, George Mason University, Virginia, where I lecture on a variety of marine biological topics including oceanography, marine ecology, and marine mammal biology and conservation. In addition, I am a research associate and visiting Lecturer at the University (of London) Marine Biological Station, Millport, UK. I was elected a Fellow of the Royal Geographical Society in 1997 and I have been a member of the Scientific Committee of the International Whaling Comission since 1999, sitting on various IWC sub-committees, including the Standing Working Group on Environmental Concerns, which deals among other issues with the effects of noise on cetaceans.

3. In preparing this Declaration, I have reviewed the Navy's Environmental Assessment for its JTFEX and COMPTUEX exercises off California as well as a previous environmental assessment prepared by the Navy for its 2006 Rim of the Pacific (RIMPAC) exercise. The conclusions I draw and opinions I express are supported by texts and research that other experts in my field would consider reliable.

4. The Navy considers that energy exposure levels up to 215 decibels would not cause serious injury to cetaceans, a figure that it extrapolates from studies of temporary threshold shift (TTS),or temporary deafness, in two species of trained marine mammals. However, this

level of sound is likely to be several orders of magnitude louder than noise levels that caused beaked and minke whale strandings in the Bahamas in 2000. At the 2004 Scientific Committee meeting of the International Whaling Commission, it was estimated that sound exposures of beaked whales during the 2000 Bahamas incident were actually much lower than previously thought: "The sound exposure levels modeled . . . at positions of beaked whale sightings . . . in the Bahamas do not exceed 160-170 dB re 1μPa @ lm for 10-30 sec" (IWC 2004).[1] This maximum level, when converted into energy units, is less than levels which the Navy considers will lead only to non-injurious effects, or at worst only minor injury, in beaked whales.

5. Using auditory injury as a proxy for all sonar-related injuries and mortalities in cetaceans is generally considered by the world's experts in this field to be outdated and insufficient to protect whales and dolphins from harm. For example, in 2004, an IWC expert workshop noted that more recent studies point to a decompression sickness-type mechanism, rather than auditory damage, as a cause of sonar-related mortalities; and that such a mechanism "would have a significant impact on mitigation since the received noise level initiating a behavioral response is predicted to be lower (possibly much lower) than that which would cause direct physical damage [i.e., auditory injury] to tissues."[2] In light of the considerable data that have emerged to the contrary,

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[1] International Whaling Commission (2004). *2004 Report of the Scientific Committee: Annex K*. Cambridge, UK (citations omitted).

[2] International Whaling Commission (2005). *Report of the IWC Habitat Degradation Workshop, 12-15 November, 2004, Siena, Italy*. International Whaling Commission, Cambridge, UK.

the Navy's use of auditory injury as a threshold for serious injury and mortality in beaked whales is not scientifically supportable. For beaked whales, a more appropriate and precautionary threshold for serious injury based on the best available evidence is a pressure level below 160 decibels, or an energy level below 170 decibels, as indicated by data on the Bahamas Stranding event.

6. In addition, other studies have also demonstrated that young animals may be more sensitive to sound than previously thought, with a young Risso's dolphin detecting sound (at 100kHz) at a level nearly 60 decibels lower than the adult animal.[3] This new scientific data, although available to the Navy, has not been incorporated into the EA.

7. Based on my research, I am also concerned that the Navy's major exercises could cause wide-scale displacement of some species of cetaceans off the coasts of California and Mexico. Our research on cetacean abundance off the Scottish coast found that minke whale (*Balaenoptera acutorostrata*) abundance declined in association with naval exercises (Parsons et al. 2000).[4] When abundance during the Joint Maritime Course (JMC)—a major exercise involving the extensive use of mid-frequency and other active acoustic sources—was compared to periods preceding md following the exercise, the decrease during the JMC proved to be dramatic

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[3] Nachtigall, P.E., Yuen, M.M.L., Mooney, T.A. and Taylor, K.A. 2005. Hearing measurements form a stranded infant Risso's dolphin, *Grampus griseus*. *J. Experiment. Biol.* 208: 4181–4188.

[4] E.C.M. Parsons, I. Birks, P.G.H. Evans, J.G. Gordon, J.H. Shrimpton and S. Pooley (2000), "The possible impacts of military activity on cetaceans in West Scotland," *European Research on Cetaceans* 14: 185-190.

and statistically significant. These findings corroborated observational data by whale-watching and marine tourism operators in the area. Abundance did not return to pre-sighting levels for several weeks following the close of the exercise.

8. The absence of minke whales was a result of avoidance of their perennial feeding grounds rather than changes in surfacing rates, which have been analyzed and do not account for the absence. In addition, decreases in harbor porpoise *(Phocoena phocoena)* presence were also noted during the period of the JMC (Parsons et al 2000). Similar decreases in porpoise and minke whale sightings were also recorded in another location in West Scotland, in association with naval activities that extensively used active acoustics. Harbor porpoises and minke whales are the two most common cetacean species in the region.

9. Displacement of cetaceans over a wide area, such as we documented during the Royal Navy's exercise off Scotland, could have population-level effects, particularly if the displacement coincides with seasonal breeding or foraging. Based on our research, I believe there is significant potential for population-level effects, particularly if the displacement coincides with seasonal breeding or foraging. Based on our research, I believe there is significant potential for population-level effects from individual JTFEX and COMPTUEX exercises, as well as from the succession of exercises that the Navy has proposed, which would affect many of the same populations of marine mammals. For some species, the risk would increase should the Navy run two major exercises concurrently, as it has proposed in its "preferred alternative," i.e., there would likely be a cumulative and syn-

ergistic noise impact, with little opportunity for animals in the area finding a sound-free refuge, even if the exercises take place in separate areas within the range.

10. The mitigation measures adopted for the COMPTUEX and JTFEX events are clearly insufficient to detect, and thus prevent, disturbance, injury and mortality in whale and dolphins. Many of the cetaceans likely to be present in areas ensonified during the exercises are deep diving species, such as sperm whales and beaked whales. Many of these species, like beaked whales (Hooker and Baird 1999),[5] can easily remain submerged for more than an hour, so their chances of being observed at the surface is low (Forney 2002).[6] At an international workshop on beaked whales convened by the U.S. Marine Mammal Commission, it was noted that only beaked whale in 50 would be detected in mitigation surveys using ship-board visual observation, assuming ideal conditions, with a zero-percent chance of a beaked whale being detected at 1 kilometer from a survey vessel even when wing 7x binoculars (Barlow and Gisiner 2006).[7] There is no question that visual surveys have very limited ability to prevent impacts on beaked whales (and other deep-diving species) even within a very short distance from a sonar array.

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[5] S.K. Hooker and R.W. Baird (1999), "Deep-diving behavior of the northern bottlenose whale, *Hyperoodon ampullatus* (Cetacea: Ziphiidae)," *Proceedings of Royal Society of London, Part B: Biological Sciences* 266: 671-676.

[6] K.A. Forney (2002), "Surveys," pages 1203-1205 in W.F. Perrin, B. Wusig and J.G.M. Thewissen, ed., *Encyclopedia of Marine Mammals*, Academic Press, London and San Diego.

[7] J. Barlow and Gisner (2006), Mitigating, monitoring and assessing the effects of Anthropogenic sound on beaked whales," *Journal of Cetacean research and Management* 7: 239-249.

11. Visual monitoring for all species will be further compromised by the Navy's use of inexperienced observers. It is well established among researchers, and has been experimentally verified, that cetacean observation is poor when inexperienced monitors are used (e.g., Wade and Genodette 1993; Barlow 1995; Jefferson 1996; Aragones et al. 1997).[8] For standard cetacean surveys, two teams of two to three biologists or seasoned observers are usual.[9] Observers are typically rotated to prevent them from becoming fatigued and losing concentration after a period of one or two hours, so multiple teams would be required. In my expert opinion, the Navy's monitoring protocol, even for non-cryptic species, is substandard.

12. Conditions such as heavy winds, fog or rough weather would further reduce the likelihood of detecting important or vulnerable species. Typically, cetacean surveys are not conducted in conditions stronger than a fresh breeze (5 on the Beaufort scale), as rough weather severely reduces the ability to sight cetacean (e.g., Wade and Gerrodette 1993; Barlow 1995; Jefferson 1996; Aragones et al. 1997). Similarly, the efficacy of visual

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[8] C.J. Stone (2003), *The effects of seismic activities on marine mammals in UK waters* 1998-2000, JNCC Report 323, Joint Nature Conservation Committee, Peterborough, UK.

[9] P.R. Wade and T. Gerrodette (1993), "Estimates of cetacean abundance and distribution in the eastern tropical Pacific," *Reports of the International Whaling Commission* 43: 477-493; J. Barlow (1995), "The abundance of cetaceans in Californian waters. Part I: Ship surveys in summer and fall 1991," *Fisheries Bulletin* 93: 1-14; T.A. Jefferson (1996), "Estimates of abundance for cetaceans in offshore waters of the northwest Gulf of Mexico, 1992-1993," *Southwestern Naturalist* 41: 279-287; L. V. Aragones, T.A. Jefferson and H. Marsh (1997), "Marine mammals survey techniques applicable in developing countries," *Asian Marine Biology* 14: 15-39.

monitory drops significantly at night, and light-intensifying goggles are generally rendered ineffective on vessels with high levels of deck lighting. Based on my experience in the field and my knowledge of survey methods, I believe that using visual observers in sea states greater than Beaufort 5, during fog, or at night, would have little to no mitigation value, and one could not categorically say animals were not being harassed, or injured, during these low-visibility periods. Therefore, the only really effective mitigation measure, during periods of low visibility, would be to cease or reduce sound outputs. There is no consideration of these periods of low visibility in the EA's mitigation measures, or periods of surface ducting (when sound may travel greater distances in the water), despite both being considered in the suite of RIMPAC mitigation methods.

13. An effective mitigation measure would be to minimize the risk that beaked whales receive a level of sound which could lead to life-threatening behavioral whales receive a level of sound which could lead to life-threatening behavioral changes, such as stranding. As noted above, received energy level of 160-170 dB has been linked with the 2000 stranding event in the Bahamas.[10] Therefore, developing a mitigation strategy that ensures received levels for beaked whales could not exceed 170 decibels (and the threshold impact level could in fact be lower) should be an absolute minimum standard for mitigation considering our current knowledge. The conditions that the Navy sets for avoiding beaked whale mortalities are so inappropriately narrow that they do not reflect the full set of conditions present in

[10] International Whaling Commission (2004), *2004 Report of the Scientific Committee: Annex K*, Cambridge, UK (citations omitted).

previous stranding events, or reflect known criteria for important beaked whale habitat.

14. There is no information provided as to the methods that would be used in the aerial survey. Again, there are special methods and protocols used by scientists conducting aerial surveys to maximize their likelihood of spotting cetaceans. The fast speeds at which aircraft travel mean that areas of sea surface will only be transected very briefly; thus long-diving species such as the various sperm whales (*Physeter macrocephalus* and *Kogia* spp.) and beaked whales would easily be missed. Aircraft used in aerial surveys themselves may produce significant amounts of noise; the possible complications this might cause should be considered, in particular behavioral reactions. For example, in response to high-intensity sound in the air, animals may submerge below the surface, decreasing their ability to be sighted and increasing their risk of sonar ensonification. With an appropriate and rigorous methodology, aerial surveys could provide useful information that should prevent cetacean impacts, but the Navy has not considered such protocols (or the potential complicating factors of aerial overflights near sonar operation) in its EA.

15. At present there is no published data to suggest any level of received mid-frequency sonar sound at which baleen whales (such as the endangered resident population of blue whales off the coast of California) display behaviour that might be life-threatening. The best available scientific data is a published study which shows biologically significant behavioral reactions of right whales at a received 154 dB energy level (with

sound pressure levels in the low 130s).[11] Therefore a precautionary energy-based standard for baleen whales should be 154 dB, which is considerably lower than the Navy standard.

16. Mitigation methods for RIMPAC included geographical exclusion zones as an appropriate safeguard. There are no clear geographical exclusion zones offered with the current suite of mitigation measures. At the very least, there should be consideration of exclusion zones, particularly area of important habitat for, and high abundance of, California's globally important population of endangered blue whales. The measures propose by the Californian Coastal Commission would help to alleviate impacts on these whales.

17. Sound can carry significant distances in the marine environment. For example in a recent study, biologically significant mating calls of fin whales near the mid-Atlantic ridge were masked by sounds of seismic survey operations as far away as East Africa and Nova Scotia, many hundreds of miles distant.[12] Consideration should be given to the likely possibility that these military exercises may ensonify coastal waters, even though exercises may be conducted outside the coastal zone.

18. The impact of military active sonar on cetaceans has been of major international scientific interest for the

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[11] Nowachek, D.P., Johnson, M.P., Tyack, P.L. (2004), "North Atlantic right whales (*Eubalaena glacialis*) ignore ships but respond to alerting stimuli," *Proceedings of the Royal society of London B. Biological Sciences* 271: 227-231.

[12] S.L. Nieukirk, K.M. Stafford, D.K. Mellinger, R.P. Dziak, and C.G. Fox (2004), "Low frequency whale and seismic airgun sounds recorded in the mid-Atlantic region," *Journal of the Acoustical Society of America* 115: 1832-1843.

last years. In the IWC Scientific interest for the last five years. In the IWC Scientific Committee, for example, it has repeatedly been discussed and reported on and was a primary focus of a special 2004 symposium; it has also been the subject of international scientific workshops organized by the U.S. Marine Mammal Commission and European Cetacean Society, and of numerous reports and papers in a variety of fields. On the policy side, it has been addressed by two European regional seas agreements, the European Parliament, the IUCN, and other international bodies, and has been a subject to international workshops assembled by the Marine Mammal Commission and NATO. I believe that any precedent set by the U.S. Navy will be closely watched both domestically and internationally and will have significant implications for the development of this issue in the United States and abroad.

19. In consideration of the above points, it is my expert opinion that the environmental assessment for the Navy's JTFEX and COMPTUEX exercises are insufficient, and that a "finding of no significant impact" cannot be supported.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed this 11th day of April, 2007.

/s/ EDWARD C.M. PARSONS
EDWARD C.M. PARSONS

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

SUPPLEMENTAL DECLARATION OF EDWARD C. M. PARSONS

I, EDWARD C. M. PARSONS, declare the following:

1. This Declaration is submitted in support of Plaintiffs' request for effective mitigation of mid-frequency sonar exercises in Southern California. The statements contained in this Declaration are true and correct to the best of my knowledge and, in the case of my opinions, I believe them to be true. If called as a witness, I could and would testify competently to the statements contained herein.

* * * * *

4. Research that I have conducted off the Scottish coast has demonstrated that marine mammal abundance may decline when confronted with naval exercises (Par-

sons et al. 2000).[1] Declines in minke whale (*Balaenoptera acutorostrata*) abundance that occurred during the Joint Maritime Course (JMC) — a major naval exercise involving the extensive use of mid-frequency and other active acoustic sources — were dramatic and statistically significant. In addition, decreases in harbor porpoise (*Phocoena phocoena*) presence were noted during the period of the JMC (Parsons et al. 2000). Similar decreases in porpoise and minke whale sightings were also recorded in another location in West Scotland, in association with naval activities that extensively used active acoustics. Harbor porpoises and minke whales are the two most common cetacean species in the region. Based on our research, I believe that the Navy's individual JTFEX and COMPTUEX exercises pose a significant risk of population-level effects on marine mammal species off the coasts of California and Mexico. These effects could be further exacerbated if sonar-induced species displacement coincides with seasonal breeding or foraging.

5. As I am concerned that the Navy's major active sonar exercises at issue in this case could cause wide-scale injury and displacement of marine mammal species, I believe that it is of critical importance that the Navy, before moving ahead with its exercises, adopt adequate safety and mitigation measures. Such measures should not only include the use of safety zones, power-downs and adequate monitoring measures, but also geographic mitigation that has the effect of avoiding biologi-

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[1] E.C.M. Parsons, I. Birks, P.G.H. Evans, J.G. Gordon, J.H. Shrimpton and S. Poolery (2000), "The possible impacts of military activity on cetaceans in West Scotland," *European Research on Cetaceans* 14: 185-190.

cally rich areas that are densely populated with marine mammals and other species. However, the mitigation measures currently in effect for the COMPTUEX and JTFEX events are insufficient to adequately prevent disturbance, injury and mortality in whales and dolphins.

6. For instance, conditions such as heavy winds, fog or rough weather can reduce the likelihood of detecting important or vulnerable species (e.g., Wade and Gerrodette 1993, Barlow 1995; Jefferson 1996; Aragones et al. 1997). Similarly, the efficacy of visual monitoring drops significantly at night. Based on my experience in the field and my knowledge of survey methods, I believe that in such conditions, one could not categorically say that animals were not being harassed or injured during these low-visibility periods. Therefore, it is imperative that the Navy implement safety measures beyond the mere use of night-vision goggles (which, by themselves, are of questionable efficacy) and adopt a policy of power-downs in low-visibility conditions such as darkness (nighttime) or heavy fog. This is the only truly effective measure to monitor the safety zone around a sonar-transmitting vessel in low-visibility conditions.

7. Provision of experienced, specialist marine mammal observers is an important mitigation issue. The UK Government's statutory body for conservation noted that when marine mammals were detected within zone of the acoustic impact by specialist marine mammal observers, the mitigation guidelines were followed and the survey was delayed 70% of the time. However, this figure dropped to 0% when Fisheries Liaison Officers or

ship's crew were used showing a significant lack of efficacy with this method.[2]

8. Appropriate experience is an extremely important criterion in the selection of effective marine observers. Observers should be experienced and able to spot and identify accurately all cetacean species likely to be encountered and should have experience in conducting surveys in environmental conditions that are common in the surveyed areas.[3] Ideally, a marine mammal observer should not require training in cetacean identification — he or she should already have several years of *in-field* experience.[4]

9. Due to the difficulty of sighting cetaceans at sea, the difficulty of interpreting their behaviour and the likelihood of subsurface changes in direction after surfacing, it is extremely difficult, even for an experienced observer, to predict the direction of movement for a sighted cetacean. Therefore as a precaution, to avoid a cetacean entering the zone of acoustic impact, any sighting of a cetacean that is brief or intermittent, should trigger a shut-down of the sonar system.

10. Power-downs are likewise critical to any meaningful mitigation of the effects of active sonar during surface ducting conditions (during which times sound

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[2] Stone, C.J. 2003. The effects of seismic activities on marine mammals in UK waters 1998-2000. JNCC Report 323. Joint Nature Conservation Committee, Peterborough.

[3] Parsons, E.C.M., Dolman, S., Jasny, M., Rose, N.A., Simmonds, M.P. & Wright, A.J. 2007. Seismic survey guidelines to reduce impacts on cetaceans: a critique. Presented at the *17th Biennial Conference on the Biology of Marine Mammals*, 29 November -3 December 2007, Cape Town, South Africa.

[4] *Ibid.*

may travel greater distances in the water with less attenuation). However, the Navy's current mitigation regime fails to adequately address surface ducting. Moreover, the Navy argues that its proposed 1,000 yard power-down / 200 yard shut-down requirement is sufficient because, the Navy says, injury will occur only within 200 yards. Such estimates are based on outdated models of the transmission of underwater sound that has not correlated with recent research conducted in the field. For example, recent studies on man-made high intensity sounds received by tagged whales have affected our understanding of noise transmission in the sea — the received sound levels did not match the computer predictions[5][6] and sound transmission was not as simple as hypothesized. For example, sound levels decreased between 5 km and 9 km from the sound source, but then increased between 9 km and 13 km. Received levels "can be just as high at 12 km as they are at 2 km".[7] Moreover, researchers have noted that intensities of sound at levels of concern occurred "well beyond ranges predicted by [modelling] and beyond where visual observers on the source vessel can monitor effectively."[8] They also have concluded "that simple geometric spreading models cannot be used to establish impact

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[5] DeRuiter, S.L., Tyack, P.L., Lin, Y.-T., Newhall, A.E., Lynch, J.F. and Miller, P.J.O. 2006. Modeling acoustic propagation of airgun array pulses recorded on tagged sperm whales (*Physeter macrocephalus*). *Journal of the Acoustical Society of America* 120: 4100-4114.

[6] Madsen, P.T., Johnson, M., Miller, P.J.O., Aguilar Soto, N., Lynch, J. and Tyack, P. 2006. Quantitative measures of air-gun pulses recorded on sperm whales (*Physeter macrocephalus*) using acoustic tags during controlled exposure experiments. *Journal of the Acoustical Society of America* 120: 2366-2379.

[7] p. 2377, *Ibid.*

[8] p. 2376, *Ibid.*

zones when assessing potential effects on marine mammals in a deep water habitat"[9] which effectively negates and invalidates the Navy's calculations for zones of impact.

11. Furthermore, the hypothesized zone of impact was calculated using models based on hearing abilities of captive animals. But some studies have shown that free-ranging animals can react at received levels lower than predicted from captive studies,[10][11][12] up to 10,000 times quieter.[13] A recent review and analysis of studies on responses of cetaceans to noise reported that "observed free-ranging populations [on more than 1,486 animals] have lower behavioral thresholds to anthropogenic sound than observed captive individuals [25 animals studies in total]"[14] further emphasizing that free-ranging animals can react at received levels lower than predicted from studies on captive animals. Moreover, this review reports that "Empirical estimates indicate a .945 proba-

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[9] p. 2377, *Ibid.*

[10] Findley, K.J., G.W. Miller, R.A. Davis, and C.R. Greene. 1990. Reactions of belugas, *Delphinapterus leucas*, and narwhals, *Monodon monoceros*, to ice-breaking ships in the Canadian high Arctic. *Canadian Journal of Fisheries and Aquatic Sciences* 224: 97-117.

[11] Koschinski S., Culik B.M., Henriksen O.D., Tregenza N., Ellis G., Jansen C. and Kathe G. 2003. Behavioural reactions of free-ranging porpoises and seals to the noise of a simulated 2 MW windpower generator. *Marine Ecology Progress Series* 265: 263-273.

[12] Gould, J.C. and P.J. Fish. 1998. Broadband spectra of seismic survey air-gun emissions, with reference to dolphin auditory thresholds. *Journal of the Acoustical Society of America* 103: 2177-2184.

[13] *Ibid.*

[14] Abstract from Truett, A.A. 2007. *Ecological risk to cetaceans from anthropogenic ocean sound: characterization analysis using a professional judgment approach to uncertainty.* Ph.D thesis. University of Maryland.

bility that the sound threshold for free-ranging animals lies below the 180dB rms NMFS status quo criterion"[15] which also casts doubt on the Navy's hypothesized zone of impact.

12. Further, although mitigation methods approved for the Navy's 2006 RIMPAC exercise included geographical exclusion zones as an appropriate safeguard, there are no clear geographical exclusion zones offered with the current suite of SOCAL mitigation measures — no habitat within the SOCAL operating area is off limits to active sonar use during the Navy's JTFEX and COMPTUEX exercises. Stronger geographic mitigation is needed; the Navy should adopt specific geographic exclusion zones for the purpose of avoiding high-density habitats and areas where endangered species are concentrated. For example, the Navy should consider restricting its use of sonar in areas of important habitat for California's globally important population of blue whales.

* * * * *

15. In consideration of the above points, it is my expert opinion that the Navy's current proposed mitigation regime for its JTFEX and COMPTUEX exercises in the SOCAL area is inadequate, and should be strengthened so as to provide extended safety zones, power-downs in low-visibility and surface ducting conditions, and better geographic mitigation that will protect the environmental integrity of biologically important areas.

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[15] *Ibid.*

I hereby declare under the penalty of perjury that the foregoing is true and correct.

Executed on this 13th day of December, 2007.

/s/ EDWARD C.M. PARSONS
EDWARD C.M. PARSONS

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. TBD

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF SENTIEL A. ROMMEL IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

I, SENTIEL A. ROMMEL, declare the following:

1. This Declaration is submitted in support of Plaintiffs' motion for a preliminary injunction. The statements contained in this Declaration are true and correct to the best of my knowledge and, in the case of my opinions, I believe them to be true. If called as a witness, I could and would testify competently to the statements contained herein.

2. I am currently a lecturer at the University of North Carolina Wilmington and a Research Associate at

the Smithsonian Institution. From 1996 to 2006, I was on the research staff of the Marine Mammal Pathobiology Laboratory of the Florida Marine Research Institute, a division of the State of Florida's Fish and Wildlife Conservation Commission. My curriculum vitae is included as an attachment to this Declaration.

3. In 2004, I was an invited participant in an expert workshop, convened by the U.S. Marine Mammal Commission, on naval sonar and beaked whales, and am a co-author on the workshop report, which was published as part of a special section on the topic in the *Journal of Cetacean Research and Management* (Cox et al. 2006).[1] For that volume, I was also lead author on a paper discussing elements of beaked whale morphology and diving physiology that may contribute to sonar-related stranding events (Rommel et al. 2006).[2] I am also author or co-author of more than 50 reviewed scientific articles on marine mammals and over 1,750 formal necropsy reports on stranded marine mammals.

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[1] T.M. Cox, T.J. Ragen, A.J. Read, E. Vos, R.W. Baird, K. Balcomb, J. Barlow, J. Caldwell, T. Cranford, L. Crum, A. D'Amico, G. D'Spain, A. Fernández, J. Finneran, R. Gentry, W. Gerth, F. Gulland, J. Hildebrand, D. Houser, T. Hullar, P.D. Jepson, D. Ketten, C.D. MacLeod, P. Miller, S. Moore, D.C. Mountain, D. Palka, P. Ponganis, S. Rommel, T. Rowles, B. Taylor, P. Tyack, D. Wartzok, R. Gisiner, J. Mead, and L. Benner (2005/06), "Understanding the impacts of anthropogenic sound on beaked whales," *J. Cetacean Research & Management* 7(3): 177-187

[2] S.A. Rommel, A.M. Costidis, A. Fernández, P.D. Jepson, D.A. Pabst, W.A. McLellan, D.S. Houser, T.W. Cranford, A.L. van Helden, D.M. Allen, and N.B. Barros (2006), "Elements of beaked whale anatomy and diving physiology and some hypothetical causes of sonar-related stranding," *J. Cetacean Research & Management* 7(3): 189-209.

4. The conclusions I draw and opinions I express in this Declaration are supported by texts and research that other experts in my field would consider reliable.

5. Mass strandings associated with naval exercises are particularly well documented in the Canary Islands. One of the most thoroughly studied events occurred in September 2002, when, during a multi-national naval exercise called Neo-Tapon, at least 14 beaked whales of three different species stranded around the islands of Fuerteventura and Lanzarote. As with a number of other beaked whale strandings associated with sonar use, the whales were distributed in small numbers over miles of shoreline, which is atypical for the species. Many of the whales stranded live: some died on the beach despite the efforts of rescuers (animals were reported to be severely shocked and dying rapidly), but seven others were returned to sea. Over the next three days, four whales were found dead on the beaches or floating offshore in the waters around the islands.

6. In all, ten carcasses representing all three species were recovered in a condition fresh enough for detailed examination, which included analyses of tissue from numerous organ systems. These carcasses were examined by a team of experienced pathologists at the University of Las Palmas de Gran Canaria.

7. Investigators found that the whales presented a suite of internal injuries: severe congestion and hemorrhaging around the brain, ears, kidneys, and acoustic fats; acute spongiotic changes in the central nervous system; and gas/fat emboli and lesions in the liver,

lungs, and other vital organs (Fernández et al. 2005).[3] In all, the pathologies reported by investigators were most similar to those seen in human divers suffering from acute decompression sickness, or "the bends," or in animals exposed to a significant pressure event, like an underwater explosion (though no explosions were reported to occur during the exercise). Some of the same pathologies have been observed in beaked whales stranded in several other incidents associated with high-intensity naval active sonar (e.g., Evans and England 2001; Cox et al. 2006).[4]

8. The injuries found in the stranded whales were not minor, but extensive and severe, and are likely to have serious consequences for an animal affected by them (Fernández et al. 2005). In humans and experimental animals, similar injuries resulting from decompression sickness can be fatal or result in a more protracted illness leading to death. Gas/fat emboli in particular are known to cause nervous and cardiovascular system dysfunction, respiratory distress, disorientation, and other significant health effects (Fernández et al. 2005). In wild animals, such effects could compromise survival even in those cases where the injuries themselves are not acutely fatal.

9. The nature of the observed pathologies, and the conditions needed to bring them about, indicate that

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[3] A. Fernández, J.F. Edwards, F. Rodríguez, A. Espinosa de los Monteros, P. Herráez, P. Castro, J.R. Jaber, V. Martín, and M. Arbelo (2005). "'Gas and fat embolic syndrome' involving a mass stranding of beaked whales (Family *Ziphiidae*) exposed to anthropogenic sonar signals." *Veterinary Pathology* 42: 446-457.

[4] D.L. Evans and G.R. England, eds. (2001). *Joint Interim Report: Bahamas Marine Mammal Stranding Event of 14-16 March 2000*, report by NOAA/Navy.

they occurred at sea, before the whales stranded (Fernández et al. 2005). Indeed, as the 2004 U.S. Marine Mammal Commission workshop concluded, stranding alone does not account for injuries like cranial hemorrhaging or for the suite of pathologies seen now in multiple events (Cox et al. 2006). The most consistent causal mechanism that has been identified is acute bubble growth, caused perhaps by whales changing their dive profiles in response to sonar, or by a physical effect that sonar has on bubble precursors in the whales' tissue, or by both (Jepson et al. 2003; Fernández et al. 2005).[5] This mechanism is considered particularly plausible by experts in the field (Cox et al. 2006). Levels of exposure sufficient to cause changes in diving behavior, or to destabilize bubble precursors in supersaturated tissue, are potentially orders of magnitude lower than those known to directly injure whales.

10. Regardless of the mechanism, however, the evidence from multiple stranding events indicates that severe injuries are occurring in beaked whales exposed to sonar while they are at sea.

11. In my expert opinion, the use of mid-frequency active sonar in the Southern California operations area, in a region where several beaked whale species are present, poses a clear risk of severe injury and strandings in beaked whales.

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[5] P. Jepson, M. Arbelo, R. Deaville, I.A.P. Patterson, P. Castro, J.R. Baker, E. Degollada, H.M. Ross, P. Herráez, A.M. Pocknell, F. Rodríguez, F.E. Howie, A. Espinosa, R.J. Reid, J.R. Jaber, V. Martín, A.A. Cunningham, and A. Fernández (2003), "Gas-bubble lesions in stranded cetaceans," *Nature* 425: 575-576.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed this 13th day of March, 2007.

/s/ SENTIEL A. ROMMEL
SENTIEL A. ROMMEL

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. 8:07-cv-00335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Hearing Date: July 23, 2007
Time: 10:00 a.m.

Hon. Florence-Marie Cooper
U.S. District Judge

DECLARATION OF BRANDON L. SOUTHALL IN SUPPORT OF DEFENDANTS' OPPOSITION TO PLAINTIFFS' MOTION FOR A PRELIMINARY INJUNCTION

I, BRANDON L. SOUTHALL, do hereby declare as follows:

Qualifications

1. I am qualified to testify as to the technical issues regarding marine mammals and the various effects of active sound exposure on their hearing and behavior. I received Bachelor of Arts degrees in Biology and Eng-

lish from the University of Montana in 1994, completing my undergraduate thesis research on acoustic communication in marine mammals. I received a Master's of Science degree from the University of California at Santa Cruz (UCSC) in 1998 on the effects of noise interference on hearing in several marine mammal species. I received a Ph.D. from UCSC in 2002 and I continue to conduct research in association with that institution. My research includes quantifying noise interference, temporarily residual effects of noise, natural communication signal parameters, direct measurements of marine mammal behavioral and hearing responses to sound exposure and the integration of lab and field data to address comparative aspects of noise impacts on marine mammals.

2. I have been affiliated with NOAA's Ocean Acoustics Program for four years. My responsibilities are largely as a program manager and technical advisor to the agency on a wide range of sound sources (including active sonar) and their potential impacts on marine mammals. I was a co-author of the North Carolina and Hanalei Bay stranding reports, referenced in paragraph 18 below. In total, I have approximately 15 years of experience in marine mammal acoustics issues in various capacities, including empirical measurements of hearing and the effects of noise on marine mammals and the direction of science and policy on these issues.

3. The purpose of this declaration is to provide a science-based paradigm in which to consider specific issues relating to the effects of sound on marine mammals and to rebut several unsubstantiated or greatly exaggerated claims made in the memorandum supporting Plaintiffs' motion for preliminary injunction and in their expert

declarations. While there is clear scientific evidence that sound exposure can induce certain highly variable negative effects in specific conditions (up to and rarely including lethal effects), an objective scientific interpretation of the available information does not lead one to the conclusion that the mid-frequency active sonar ("MFA sonar") training exercises proposed off of southern California will result in the dire consequences to marine mammals and other listed species that Plaintiffs contend. The fact that extremely similar training operations to those proposed have in fact been occurring over a period of some forty years in the same areas of southern California without a single observation of a marine mammal mass stranding is a particularly relevant point in support of this interpretation.

Background (Marine Bioacoustics)

4. There is no question that sound is an integral aspect of the lives of most, if not all, marine mammals and other marine organisms. Light does not travel well in water, and other stimuli (like smells) are restricted in terms of providing relevant information at range in the marine environment. Marine mammals (like humans) use sound in conveying or sensing information over any appreciable distance under water. For example, we know that dolphins and porpoises use high frequency biosonar signals to find prey and sense other things around them (*e.g.*, Au, 1993). The low frequency moans and songs of large whales are vital to their reproductive interactions (*e.g.*, Tyack and Whitehead, 1983). We know that seals and sea lions rely on sound in social interactions and for listening to the sounds of predators and prey (*e.g.*, Schusterman *et al.*, 2000) and that many

species of fish use sounds for communication and other purposes (*e.g.*, Tavolga *et al.*, 1981).

5. One of the main misconceptions in the media and general public (and a flaw inherent in some of the arguments within the Plaintiffs' motion) in considering how anthropogenic sounds may interfere with these processes or induce certain effects is the notion that all marine mammals perceive, experience, and are affected by all sounds similarly. We have sufficient knowledge of these issues to know that not all animals are created equally in terms of how they use and may be affected by sounds in their environment. Sound frequency (pitch) is one extremely important property that determines what effect a particular sound may have on a particular species of animal, to the point that an identical sound (for instance, an echosounder) may be completely inaudible to a low-frequency hearer (like a humpback whale) but seem extremely loud to a high-frequency hearer (like a bottlenose dolphin).

Another common misconception regards the relative loudness of sounds. Hearing systems in animals function in a logarithmic manner, which is the reason the decibel scale is used to describe sound amplitude. In people, a 10 dB increase in amplitude results in a doubling of apparent loudness. The sound seems twice as loud, although the absolute sound pressure measurement may be orders of magnitude greater. Comparisons of sound loudness that use absolute pressure comparisons to say that one sound is "millions or billions of times louder" than another are physically incorrect and misleading.

Several of these well-known complexities and other important considerations described herein are poorly and/or inaccurately represented within the Plaintiffs' motion for preliminary injunction, as well as a number of the expert declarations in support of that motion.

For instance, in § III.B.2 (p. 18), Plaintiffs motion discusses the potential effects of MFA training exercises on southern California steelhead. They fail to include in this discussion the fact that empirical measurements of hearing in related salmonids species exist and indicate hearing in a relatively narrow low frequency band from about 10 Hz to slightly above 600 Hz (Hawkins and Johnstone, 1978; Knudsen *et al.*, 1994). While there is some extrapolation involved in relating the measurements from Atlantic salmon to Pacific steelhead, these and related data raise significant question as to whether MFA sonar exercises (~ 3.5 kHz) would be even audible, let alone lethal, to exposed steelhead. By failing to acknowledge this piece of pertinent scientific information, Plaintiffs inherently imply that the effects of MFA sonar exposure on listed steelhead will be identical to those observed in a small subset of marine mammals (despite the lack of any such observation) in a small subset of exposure conditions. For these perceptual (and other) reasons, this is neither certain nor in any way likely to be the case.

6. Of the marine animal groups mentioned above, large whales likely hear well at quite low to mid-frequencies (~10 Hz to 10s of kHz), dolphins and porpoises hear over a quite wide range extending well into ultrasonic frequencies (~100 Hz to 100+ kHz), seals and sea lions also hear well over a fairly broad range (~75 Hz to

as much as 75 kHz), and most fish hear in a narrow band of low frequencies (generally ~10 Hz to 1 kHz, but with a few notable exceptions). Frequency band differences are but one of the numerous complexities in considering how sound we put into the oceans can affect the acoustic animals that live there.

7. It is important to remember that the ocean is not a naturally quiet place. Rather, it is filled with sounds across a wide range of frequencies arising from the crashing of waves and lightning, turbulence from wind-driven processes, rumbling of earthquakes, and the cacophony of the many animals themselves tuned to the acoustic channel. Biological sounds may be signals to their intended targets (or to eavesdropping predators) but they represent noise to the vast majority of others in the ocean (animals and people alike) trying to listen for something else.

8. Given the above considerations, humans appear to have the capability to affect the overall ambient noise conditions in specific areas and frequency bands. For instance, Andrew *et al.* (2002) demonstrated an increase in low-frequency noise off southern California over a 30-year period that was likely attributable to an increase in commercial shipping. These findings have been supported and advanced by additional research on apparent changes in ambient noise off of California by McDonald *et al.* (2006). We are still trying to understand whether and at what magnitude people may be changing the acoustic environment with both chronic and discrete sources of sound on meso- and ocean-basin scales. Thus, the potential for human sound sources to affect animals in the marine environment that rely on sound must be

acknowledged. However, it is imperative to maintain a comparative perspective and recognize that these animals have undergone millions of years of evolution to function as acoustic creatures in naturally noisy environments.

Effects of Noise on Marine Life

9. Although current scientific understanding of the range of potential effects of sound exposure on marine mammals continues to develop, there are certain known categories of effects.

a) Sounds may be inaudible because they are outside the animals' hearing range or are overwhelmed by background noise.

b) Sounds may be audible (heard) but not responded to for one reason or another.

c) Sounds that have some particular perceived meaning may cause animals to respond behaviorally by either moving toward or away from a source or changing other aspects of their behavior. Certain behavioral reactions (such as approaching a fishing vessel to get an easy meal) could be viewed as positive for an animal, while others (such as avoiding a feeding area due to the presence of an intense sound source) might have some, potentially very significant, adverse outcome. Determining the biological significance of behavioral disturbance arising from noise exposure has proven to be a considerably daunting task (NRC, 2005). In extreme cases, strong reactions to sound sources can induce behaviors leading to possibly or actually lethal events (*e.g.*, NOAA and Navy, 2001; Holst *et al.*, 2005).

d) Noise can interfere with hearing of desired signals (called "masking") or can cause temporary or permanent reductions in hearing sensitivity.

e) While little is generally known about the extent to which noise can affect systems other than hearing in marine mammals, it is known in other mammals that sound can induce stress responses and physically affect tissues. Some initial data on these apparent phenomena do exist for marine mammals (Jepson *et al.*, 2003; Romano *et al.*, 2004; Fernandez *et al.*, 2005).

10. Certain aspects of marine acoustics (*e.g.*, underwater sound propagation and the echolocation systems of certain cetaceans), are generally well understood, whereas others are less so. We have some data regarding basic marine mammal hearing capabilities, but only for a minority of species and most studies involve only one or a few individuals. There is a considerable body of literature (based upon research done on animals in the wild as well as trained animals in captivity) on the behavioral responses of certain marine mammals to some human sound sources, but comparing results within and across species and sources is difficult or impossible, and behavioral context is a significantly limiting factor (*e.g.*, NRC 2005). We know that sound exposure can interfere with nominal hearing function either simultaneously or residually, but we lack the scientific tools to determine the biological significance of such effects (NRC, 2005). However, the science of measuring temporary hearing loss in marine mammals under controlled conditions and using such information to predict higher-order effects regarding direct injury from sound exposure (*i.e.*, permanent hearing loss) remains limited and will

require considerable additional research before these matters are even moderately understood. Finally, there is some information to indicate that noise may have adverse non-auditory effects on marine mammals, but we lack clear information on the exact mechanisms involved and any data whatsoever on the exposure conditions under which such effects may occur (Jepson *et al.*, 2003; Piantadosi and Thalmann, 2004; Fernandez *et al.*, 2005; Cox *et al.*, 2006).

A number of federal agencies, including and principally the U.S. Navy are actively supporting research on many of these issues. Major advances have been made in the past decade and, at the currently escalating level of investigation and technological advancement, the next decade will likely see major scientific progress or even resolution on many of the more poorly understood issues.

11. While our ability to assess the type, magnitude, and meaning of the effects of sound exposure (either natural or anthropogenic) remains limited by the current state of scientific information and tools to apply, research in a variety of the above areas has progressed rapidly over the past decade with the increased visibility and recognition of the issue. Despite increased interest by regulatory agencies, there has been relatively little federal or state research funding provided to invest in research, and the Office of Naval Research (ONR) and other components of the U.S. Navy remain the major contributors to research in this arena. In my direct experience, each have approached research on this subject (and interacted with the investigators they support) proactively, professionally, and objectively. This is not to say that

research in this area would not benefit from a broader and substantial participation from various agencies, particularly NOAA. However, in my view the tired efforts to discredit high-quality marine mammal research based on a perceived bias resulting from ONR/Navy being the funding source are baseless.

Marine Mammal Stranding Events and Anthropogenic Sound

12. With regard to the specific matter of whether, and under what conditions, sound exposure may play a role in marine mammal stranding events, again some appropriate perspective is required. There have been strandings of marine mammals for most of recorded human history and likely for millions of years before that. The question of what causes these animals to come ashore and die, sometimes in large groups, has been the subject of public interest and scientific debate for many decades. Certain species appear to react to a variety of environmental and/or social stressors by moving into shallow water areas, either in seeking refuge or out of disorientation. We are closer to understanding certain aspects of some events (*e.g.*, they appear to be more likely to occur during or following severe weather events in some areas or as a result of disease), but for most stranding events, unequivocal causation is not determined. The hypotheses for natural causes of marine mammal strandings include storms, earthquakes, changing oceanographic conditions, presence of predators or prey in abnormal near shore areas, infectious and non-infectious disease, social interactions within or between species, general disorientation, solar flares, simple bad

timing in moving out of tidal areas, direct human activities such as fishery by-catch and many other factors.

The seemingly current first assumption in the case of a stranding event anywhere in the world seems to be that it was somehow the result of military sonar transmissions. While we have seen such relationships clearly in certain specific conditions (described below), much more often than not other causes are identified (some natural, others anthropogenic). The rushing-to-judgment presumption and propaganda that all marine mammal strandings have some relation to military sonar is neither supported by science nor constructive to the common overall goals of scientists, conservationists, regulators, or sound-producing organizations in really identifying and mitigating the effects of sound on marine life.

Few of those of us with lengthy professional involvement in this issue would disagree with the IWC statement cited on p. 1 of the Plaintiffs' motion that, "...the evidence linking MFA sonar to the mass strandings and deaths of marine mammals is 'very convincing and appears overwhelming.'" Where Plaintiffs err, however, is failing to recognize or identify the specific conditions under which such a relationship is convincingly and overwhelmingly accepted. Plaintiffs seemingly argue that because such a relationship is acknowledged to exist in very specific conditions, that it must necessarily therefore exist in all conditions. This is inconsistent with both expectation and scientific observation.

13. In terms of sound exposures contributing to or causing marine mammal stranding events, there are a small number of cases which have occurred during the last decade in which there is compelling evidence to make

such a connection (discussed in paragraph 16 below). It is also known that "drive" fisheries, involving the directed movement of sound sources and vessels, have intentionally induced the stranding of marine mammals for thousands of years as a hunting technique (Brownell *et al.*, 2005). However, assessing whether a specific anthropogenic event contributed to or caused a marine mammal stranding event is almost always extremely difficult due to the extent of the uncertainties relative to the specifics about the event or animals prior to and during anthropogenic sound exposures. Generally all that is certain about animal locations is where they wind up on the beach rather than where they were in the water before, during, and after a particular human activity. This can limit or preclude quantitative assessments of exposure and make the determination of correlation and causation more of a matter of assessing the strength of evidence. Of course, this results in differences of opinion on where the bar lies in terms of burden of proof.

Some place the bar so low that sonar would be falsely implicated in some cases where there are in fact other causative factors. Others place the bar so high that sonar would never be determined causative, regardless of how substantial and compelling the evidence. Neither of these approaches is in my opinion scientifically justifiable given what is currently known about other causes of strandings and increasing evidence of the strong reactions of certain species (particularly deep-diving, pelagic, odontocete cetaceans) to certain sound sources (specifically mid-frequency tactical active sonars) in certain environmental conditions (generally poorly known but likely including steep-walled bathymetry and other physical variables such as surface "ducting" conditions

that favor sound propagation over relatively longer distances near the surface).

14. However, regardless of what criterion is used in assigning causality in stranding events in which anthropogenic sound exposure played at least some role and even presuming that only a small fraction of potential events is identified, the absolute numbers of animals possibly involved is likely in the tens to hundreds of animals per year worldwide. As a matter of perspective, compare this to the many hundreds of thousands of animals each year known to die as a result of fisheries bycatch interactions (Read *et al.*, 2006). Thus, while acoustic-related stranding events may impact some local populations, they should be regarded clearly as being orders of magnitude less significant than other, known sources of marine mammal mortality.

15. An overarching principle that has guided the stranding investigations of which I have been a part is adherence to scientific principles. This includes refraining from attributing causation when in fact sound exposure may merely be spatially and temporally coincident with the event. I have sought to be utterly objective in my role in these analyses, to consider all possible relevant factors equally, and to not overstate the evidence in terms of assessing causation. I, as well as all the investigative teams that I have been associated with, fully recognize that as science advances we may re-examine previous events.

16. Three categories have emerged in terms of human sound sources having some contribution to marine mammal strandings when there is some degree of spatial and temporal correlation. One category includes the more

well-known cases (Greece 1998; Bahamas, 2000; Madeira 2000; Canary Islands 2002) where there is little disagreement over whether active, military mid-frequency sonar was responsible for marine mammal mass strandings (*e.g.*, Frantzis, 1998; NOAA and Navy, 2001; Fernandez *et al.*, 2005; Cox *et al.*, 2006).

17. A second category includes events where there is time and space correlation between known sound sources and marine mammal strandings, but another clear causal factor is identified. The best examples of these include two recent events (one in the Florida panhandle in August 2004 and a second in the Florida Keys in March 2005) in which military vessels with known active sound sources were present in the area of marine mammal strandings. In both events, disease processes appear to be the likely causative agents of the mass mortalities (T. Rowles, pers. comm. – investigative reports of these incidents are in preparation).

18. The third category, more difficult to evaluate but certainly the most common of the three, includes situations where it is possible that active acoustic sources played at least some role in a stranding event but insufficient evidence exists to establish a direct and clear causative relationship and there is no other unequivocal causal agent(s) identified. In these situations, those investigating the relationship must avoid defaulting to causation and, rather, perform a full investigation, clearly outline the evidence and interpret the strength of the evidence regarding the full range of potential causative factors according to some reasonable criterion that acknowledges limitations in current scientific knowledge (as discussed in paragraph 12 above). In many cases,

there is insufficient information about the event itself and the range of possible contributing factors to conduct a detailed investigation and consider whether the event may fall into either of the first two categories (in paragraphs 15 and 16). In these events, it is simply inappropriate to make such determination, one way or another. In certain cases, detailed investigations may be conducted and the event may still remain in this third category where causation (from any factor) may neither be confirmed nor eliminated. Two recent examples illustrate the difficulties faced in assessing this third category of events. I was a contributing author to both stranding reports described below.

a) In January 2005, 34 pilot whales, a minke whale, and two dwarf sperm whales stranded in an area of the Outer Banks of North Carolina over several days (Hohn *et al.*, 2006). There were brief, sporadic transmissions of active, mid-frequency sonar over several days preceding the strandings in the general area offshore (50-100 nm away). Nothing was known about the behavior or location of the animals before they were spotted dead or dying on the beach. However, pilot whale strandings on the East Coast of the U.S. are a quite common event. Additionally, there was a significant change in weather patterns and wind speed/direction the day before the first stranding. The necropsy analyses that were conducted failed to demonstrate a clear causal factor of any sort. The conclusions reached in the report (Hohn *et al.*, 2006) were that sonar could not be ruled out as possibly being involved in some way, but that based on the sporadic, intermittent nature of transmissions and the major weather event, the evidence for such a relationship was "not particularly compelling." My expert opinion is

that, while sonar exposure cannot be unequivocally ruled out, given the timing and spatial extent of the transmissions and the presence of a significant weather event, it is unlikely that sonar was even a contributing factor in the North Carolina event.

b) A second event involved a large group of melon-headed whales observed milling in Hanalei Bay on the north side of the Hawaiian island of Kaua'i on 3-4 July 2004; the event was spatially and temporally coincident with active sonar exercises being conducted as part of the Rim of the Pacific (RIMPAC) training exercises (Southall *et al.*, 2006, hereafter referred to as the "Hanalei report"). During this extremely uncommon event (previously undocumented in the Hawaiian Islands), the animals were observed entering the bay, milling, and exhibiting abnormal behaviors on 3 July while sonar operations were being conducted offshore and numerous people interacted sporadically with the animals in the water.

On the afternoon and evening of 2 July, six naval vessels transited from O'ahu toward the island of Kaua'i, in a generally directed manner while transmitting sonar for a period of multiple hours. The location of the animals prior to their entering the bay, and thus potential exposure and behavioral response to sonar, is unknown. However, a spatial analysis indicated that requisite transit time from the general operational area on 2 July to Hanalei Bay (the largest embayment in the acoustic "shadow" of the island) on 3 July was reasonably consistent with the swimming speed of many pelagic cetaceans. There were no known significant atmospheric, oceanographic, or seismic events in the area during that

period of time, nor were there any known feeding attempts of the animals while in the bay. At the request of NMFS, the U.S. Navy ceased active sonar and live fire exercises on the afternoon of 3 July and did not resume activities in the area for several days. The animals remained milling in the bay overnight until people on the ground approached the animals in a coordinated manner and herded them out of the bay the following morning. There was just one known mortality (a small calf) during the event. The Hanalei report concluded that the cause of mortality, while not definitively known, was very likely poor nutritional condition resulting from maternal separation.

The investigation of this event concluded that there was insufficient evidence to determine causality. There are a number of uncertainties about sonar exposure and other potential contributing factors and assumptions inherent to a reconstruction of events in which sonar was the causative agent that simply preclude this determination. Primarily restrictive factors include (1) insufficient information regarding where the animals were and how they reacted during sonar operations on 2 July; (2) whether a behavioral reaction would have caused them to move in a sustained manner over considerable distance the night of 2 July and morning of 3 July (including after the cessation of sonar); (3) the lack of *in situ* measures of received sonar exposures; and (4) insufficient information on other potentially contributing factors (such as the presence of prey or the possibility that a sick or injured individual led the herd of whales into the bay). The analysis in the Hanalei report considered whether it was possible that animals in the operational area of directed, sustained sonar transmissions on 2 July

could physically have gotten to the bay by 0700 on 3 July. While it was determined that it was possible, a number of assumptions would have to be met for this to have been the case, including that the animals were in the general vicinity of sonar transmissions on 2 July; that they would have moved away from the approaching vessels; that a large pod of mixed sex and age class individuals would swim at a sustained and relatively rapid pace for a prolonged period of time; and that the animals would have fled directly to Hanalei Bay. The report acknowledges these factors as unknown. Further, the estimations of received sonar exposures in the Hanalei report are based on propagation modeling rather than direct measures. Thus, even for the exposures on 3 July, where the position of the animals was reasonably well-known (in the bay), there is a large range of potential exposures that are based on mathematical predictions using bathymetric and nominal environmental features (sound propagation conditions of the water). The Navy's own modeling of the 3 July transmissions strongly suggested that at least some of these would have been clearly audible in the bay despite the considerable range (~25 km) of the vessels, but there are no empirical measures with which to validate this and compare it to other acoustic activity at the time (including the animals own vocalizations). Finally, if sonar did cause the animals to enter and/or remain in the bay, it is not clear why they would have remained there for some 17 hours after its use was terminated. Given these uncertainties and underlying assumptions, the Hanalei report concluded that it was not possible to determine whether sonar was the cause of the stranding

However, the authors of the Hanalei report found the following evidence to be sufficiently compelling to conclude that it was reasonably likely that sonar may have played *some* role in either causing the animals to move into the bay and/or remaining there: (1) the highly uncommon nature of the event; (2) the directed movements and sustained transmissions of vessels on 2 July; (3) the close temporal association of sonar transmissions surrounding the island with the event in general; (4) the anomalous behavior of the animals in the early stages of their time in the bay; (5) the fact that tactical mid-frequency sonar signals have previously been involved in stranding events involving deep-diving cetaceans; (6) propagation modeling indicating that 3 July transmissions were likely the dominant acoustic event in the bay for multiple hours; and (7) lack of any other compelling information.

To be clear, and contrary to certain media and other characterizations, the carefully-worded and qualified Hanalei report event did not conclude that active military sonar *caused* this event. We do not know what caused it. The report stated that based on the information available, sonar *may* have *contributed* to a "confluence of events," including human presence (notably the uncontrolled and random human interactions fragmenting the pod of whales on 3 July) and/or other unknown biological or physical factors. There have been various interpretations of the strength of evidence regarding whether sonar played some role in the event. It should be clearly stated that our report did not conclude that there was a causal relationship, but rather that there may have been a number of coincident factors (one of

which may have been active sonar) that ultimately resulted in the stranding event.

I have recently become aware of a separate event involving melon-headed whales and rough-toothed dolphins that took place over the same period of time in the Northern Mariana Islands (Jefferson *et al.*, 2006). Some 500-700 melon-headed whales came into Sasanhaya Bay on 4 July 2004 on the island of Rota and then left of their own accord after 5.5 hours; no known active sonar transmissions occurred in the vicinity of that event. Video is being made available for viewing to determine if the behavior of the animals was in any way similar to that of the Hanalei event. Global reports of these types of events or sightings are of great interest to the scientific community and continuing efforts to enhance reporting in island nations will contribute to our increased understanding of animal behavior and potential causes of stranding events. Exactly what, if any, relationship this event has to the simultaneous events in Hawai'i and whether they might be related to some common factor (*e.g.*, there was a full moon on 2 July 2004) is and will likely remain unknown. However, these two synchronous, nearshore events involving a rarely-sighted species are curious and may point to the range of potential contributing factors for which we lack detailed understanding and which the authors acknowledged might have played some role in the "confluence of events" in Hanalei Bay.

19. Based on the combined observations of marine mammals during military operations (*e.g*, RIMPAC 2006 after-action report) and the fact that many military sonar training operations occur globally without observing

strandings (bearing in mind large differences in the extent to which people are looking for them), it seems highly unlikely that operation of military sonar would always or even commonly result in strong reactions (*e.g.*, movement *en masse* to shore) or stranding of marine mammals. Rather, the combined evidence suggests that such events may occur only in rare instances where there are certain (generally poorly understood) combinations of interacting physical and biological factors. Our efforts to improve mitigation and monitoring efforts to reduce the likelihood of subsequent stranding events resulting from military sonar depend entirely on our ability to continue to identify and understand these factors. Many studies along these lines are underway and will continue to inform the continuously iterative process to enhance mitigation and monitoring.

Plaintiff's motion for preliminary injunction appears to be largely based on the presumption that any and all MFA sonar exposures on any and all marine life will necessarily result in mass-stranding events. Dire claims of tens or hundreds thousands of deaths per year from sonar exposure seem completely inconsistent with both anecdotal and scientific observation. Clearly some or even many of the animals affected by sonar are and will remain undetected, even with enhanced observational effort. However, given the effort expended in terms of locating stranded marine mammals and the general populace of many of the coastal areas in which military sonar training operations occur (including southern California), it seems highly unlikely that we are missing the magnitude of this overall problem by five or more orders of magnitude. Such hyperbole, inconsistent with available information, should be recognized as such.

Exposure Thresholds

20. Much of the discussion and debate over assessing the effects of sound on marine life has hinged on disagreements regarding the application of limited data to the determination of exposure thresholds. Some of the early approaches, such as using a 180 dB (root-mean-square, or RMS) value for the onset of physical injury following sound exposure, were derived in the absence of any real information and were consequently done so with considerable precaution. The past decade of research has validated the conservative nature of such a criterion, based on extensive data from both the field and the laboratory. For instance, experiments on temporary threshold shift in captive settings have shown that exposure levels of 180 dB RMS and (sometimes much) higher are typically required to induce even temporary changes in the hearing in cetaceans, with no concomitant physical injuries (or hearing loss) observed from many dozens of such exposures (e.g., Finneran *et al.*, 2005). However, significant difficulties and sources of disagreement remain in terms of setting exposure criteria. These appear to be less contentious in terms of estimating direct physical injury to auditory systems (hearing) than is the case for behavior, although major uncertainties remain in both areas.

21. On the matter of deriving information regarding injury threshold values relative to marine mammal stranding events, some clarification is required. Plaintiffs' motion in § III.B. (p. 12) states that "MFA sonar can cause beaked whale mortality at levels of 160-70 decibels and possibly lower," based on conclusions reached in the Weilgart declaration regarding the Baha-

mas stranding. There is no scientific basis to this conclusion. The positions of animals that ultimately stranding during the period of exposure in that event (and in fact every marine mammal stranding or behavioral response event other than the Haro Strait incident) were completely unknown. Based on the timing of their stranding (when known) it is possible to develop some bounds regarding exposure if the location and transmission characteristics of the vessels are also known. However, without the position of the animals during the actual transmissions themselves (not where they ultimately wound up), it is possible to say only very general things about the exposures (such as the minimum possible exposure levels or a very broad range of conditions). Placing such a specific MFA exposure level on animals involved in the Bahamas is scientifically unjustified. The inability to know with any degree of certainty the exposure conditions for animals that stranded is in fact why information regarding most stranding events has not been directly applied (at least in the U.S.) in deriving and/or assessing injury or other science-based response thresholds for MFA or other sound sources.

22. Regarding the issue of behavioral threshold levels specifically, there have been some recent important developments and new information. The application of behavioral threshold criteria will always be exceedingly challenging because of the highly contextual nature of behavioral responses (and thus the difficulty in extrapolating from one condition to another). Divergent opinions exist regarding which of the limited data available are applicable to the derivation of science-based exposure thresholds for behavior. Many of the available studies from the field are so different from the context

of active sonar exposure that they are not useful in assessing the behavioral responses of marine mammals to military sonar. Further, many potentially applicable studies lack sufficient controls or precision regarding sound exposures and other pertinent information as to also be discarded from consideration. Thus, the appropriate scientific information available to apply to the derivation of behavioral thresholds is confined to a small set of studies, some from the field and others from captive animals observed under controlled conditions. Each of these have their own strengths and weaknesses, but provide some basis for advancing threshold calculations beyond an earlier 160 dB (RMS) criterion which is clearly not appropriate to the specific conditions under consideration here. Initially the Navy proposed a 190 dB (SEL – sound energy) threshold in applying a subset of the available data. NMFS argued that a more conservative interpretation of the available information (and a 173 dB SEL criterion) was more appropriate, given the level of uncertainty and extrapolation. This value was accepted by Navy as the basis for threshold calculations in the RIMPAC 2006 and other mid-frequency sonar training exercises. It is an interim approach and not without its limitations, but one which is an advancement over previous approaches.

23. Subsequent efforts to improve the predictive power of threshold determinations (and mitigation and monitoring efforts that may be triggered as a result of such calculations) have centered on a more probabilistic (rather than step-function) approach to quantifying the likelihood of behavioral responses as a function of sound exposure. Such approaches, common in the general field of risk assessment for exposure of people and other ani-

mals to a variety of stimuli, are likely to be increasingly prevalent in subsequent iterations of behavioral exposure thresholds.

Specific Comments regarding Navy SOCAL exercises

It is particularly important to note certain important points regarding Navy MFA operations in southern California generally and allegations made in Plaintiffs' motion for preliminary injunction specifically.

24. Plaintiffs' motion (p. 3) claims that mid-frequency sonar will injure or kill many marine mammal species that have never observed to have been affected by such exposures. While it is fair to note that there are very limited data on the direct exposures of many species, it is also fair to again note that the observed stranding events have all included a very few species (almost exclusively a sub-set of the deep-diving beaked whales) in similar, specific environmental and operational conditions. Absence of observation is clearly not concrete evidence of an absence of a specific effect. However, the available information and the overall magnitude of known sonar operations in areas where many of these species exist and were likely exposed but did not strand, suggests that the likelihood of those effects observed in a small subset of species and specific circumstances is extremely rare and does not necessarily apply to all species everywhere.

25. In my opinion, there remains room for improvement in the efficacy of current monitoring and mitigation measures, particularly regarding visual observation methods, that should be seriously considered. Technological advances in this area are rapidly occurring, however,

and should continue to inform and improve mitigation efficacy. As evidence of this progression, which should not cease or be reversed, it is also fair to note that the current mitigation measures proposed and implemented by the Navy for mid-frequency sonar training operations are vastly more expansive than those that were in place just a few years ago.

26. Finally, it is important to note the complete absence of any marine mammal mass stranding event in California during the approximately four decades of, in some cases fairly intense, sonar operations in this area. Again, absence of such observation does not absolutely equate to absence that effects have occurred and there have clearly been different levels of observational effort employed in this area during this time. However, this is a heavily populated area and even the relatively remote areas of the Channel Islands where most operations have occurred are monitored quite extensively for marine mammals. The likelihood that some or many mass strandings have occurred in this area as a result of these sonar operations is probably quite small. It is worth noting simply that the proposed exercises are not dissimilar from the many such operations that have already occurred over a long period of time, apparently in the absence of the dire effects claimed by the Plaintiffs.

Pursuant to 28 U.S.C. § 1746, I hereby declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information, and belief. If called as a witness, I could and would testify competently to the statements contained herein.

Executed on this 5th day of July, 2007, at Silver Spring, Maryland

By: BRANDON L. SOUTHALL

BRANDON L. SOUTHALL
Fisheries Biologist, Ocean Acoustics Program
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
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UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335 FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF LINDA WEILGART IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

I, LINDA WEILGART, declare the following:

1. This Declaration is submitted in support of Plaintiffs' motion for a preliminary injunction. The statements contained in this Declaration are true and correct to the best of my knowledge and, in the case of my opinions, I believe them to be true. If called as a witness, I could and would testify competently to the statements contained herein.

2. I hold a Ph.D. in Biology from Dalhousie University and an M.Sc. in Biopsychology from the Memo-

rial University of Newfoundland. For the past twelve years, I have been a Research Associate at Dalhousie University and from 2003 to 2005 was an Assistant Professor in its Department of Biology. I have also been a Research Associate in bioacoustics at the Max Planck Institute of Behavioral Physiology, in Seewiesen, Germany, and did my post-doctoral work in the Bioacoustics Research Program at Cornell University.

3. A significant portion of my work as a researcher has been concerned with bioacoustics, particularly with regard to the role that sound plays in the biology of whales, especially deep-diving whales. I have been an invited participant at several scientific meetings and workshops, including ones organized by the International Whaling Commission's Scientific Committee and the Canadian Department of Fisheries and Oceans, concerning the impacts of anthropogenic noise on marine mammals. I was also an alternate member of the Federal Advisory Committee on Acoustic Impacts on Marine Mammals, convened by the U.S. Marine Mammal Commission. My curriculum vitae is appended to this Declaration.

4. The conclusions I draw and the opinions I express are supported by texts and research that other experts in my field consider reliable.

5. I am concerned that the Navy's use of mid-frequency active sonar during its JTFEX and COMPTUEX exercises may have a significant impact on marine mammals in the California region.

6. Impacts may be particularly severe for populations of beaked whales, at least seven species of which occur in the region. Mid-frequency sonar has been

shown in several cases (e.g., the Bahamas in 2000, Madeira in 2000, the Canary Islands in 2002, southern Spain in 2006) to cause acute physiological damage in beaked whales, including Cuvier's and Blainville's, both of which occur in the Navy's exercise area; and a substantially larger group of mass strandings of these species has been closely associated in space and time with naval exercises. Several other species, such as melon-headed whales, minke whales, and pygmy sperm whales, have also stranded in close association with mid-frequency sonar.

7. While the number of mortalities is unknown, several factors suggest that the stranding events which have thus far been associated with naval sonar exercises very significantly undercount the number of serious injuries or deaths that have occurred. Whale carcasses are difficult to detect at sea since, with few exceptions, they tend immediately to sink; and they are also highly unlikely to strand and be reported, given the presence of scavengers, ocean currents, and the limited capacity of stranding networks in most parts of the world. Even in closely-studied populations along well-populated coasts, with individuals that have been separately photo-identified and monitored, the rate of recovery of carcasses can run well below 10 percent.

8. The available scientific evidence strongly indicates that sonar can severely injure and kill beaked whales at exposure levels at or below the Navy's proposed threshold for behavioral disruption and minor injury in those species.

9. The best-documented sonar-related event is the 2000 mass stranding of beaked whales and minke whales

in the northern Bahamas, for which nine years of baseline survey data on beaked whales are available. The Navy has modeled the sound field produced by the brief transit of ships that were operating sonar near the islands. Sound pressure levels in the areas where beaked whales were sighted rose no higher than 160-170 decibels for a total of 10-30 seconds (and may have attained 150-160 decibels for 50-150 seconds) during the course of the exercise (Hildebrand 2005; IWC 2004; NOAA and Navy 2001).[1] To translate these numbers into sound energy levels (the measure used in the Navy's environmental assessment for its major California exercises), the *maximum* level of exposure sufficient to cause whale mortality was approximately 170-184 decibels (SEL). An analysis co-sponsored in 2004 by the Office of Naval Research suggests that the mean predicted level of exposure in the Bahamas was several orders of magnitude lower.

10. The pathology data from a number of stranding events supports a similar conclusion. Investigations of those strandings have pointed to bubble growth, the formation of gas bubbles in tissue, as the mechanism of injury (e.g., Fernández et al. 2005),[2] and a consensus has

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[1] J. Hildebrand (2005), "Impacts of Anthropogenic Sounds," pp. 101-123 in T.J. Ragen, J.E. Reynolds III, W.F. Perrin, R.R. Reeves, and S. Montgomery, eds., *Marine Mammal Research: Conservation beyond Crisis*, Baltimore, Md.: Johns Hopkins, 240pp.; International Whaling Commission (2004), *2004 Report of the Scientific Committee: Annex K*, Cambridge, UK; National Oceanographic and Atmospheric Administration and U.S. Department of the Navy (2001), "Joint Interim Report: Bahamas Marine Mammal Stranding Event of 15-16 March 2000," Washington: U.S. Department of Commerce, 59pp.

[2] A. Fernández, J.F. Edwards, F. Rodríguez, A. Espinosa de los Monteros, P. Herráez, P. Castro, J.R. Jaber, V. Martín, & M. Arbelo

emerged in the research community that bubble growth, mediated perhaps by changes in diving behavior, is the most plausible explanation for the acute traumas that have been documented (e.g., Cox et al. 2005/06).[3] The sound pressure levels needed to induce critical changes in beaked whale diving patterns would be orders of magnitude lower than those required to cause tissue damage directly.

11. Furthermore, in the case of the 2004 melon-headed whale embayment off Kauai, mean sound pressure levels at the mouth of the bay were modeled below 150 decibels, with pressures rising to 155 decibels at their peak.

12. The assumption that beaked whales would not incur severe injuries or that other species would not strand at exposure levels below 215 decibels (SEL), which the Navy takes as the threshold for auditory injury, strongly and unambiguously contradicts the available science.

(2005), "'Gas and fat embolic syndrome' involving a mass stranding of beaked whales (Family *Ziphiidae*) exposed to anthropogenic sonar signals," *Veterinary Pathology* 42: 446-457.

[3] T.M. Cox, T.J. Ragen, A.J. Read, E. Vos, R.W. Baird, K. Balcomb, J. Barlow, J. Caldwell, T. Cranford, L. Crum, A. D'Amico, G. D'Spain, A. Fernández, J. Finneran, R. Gentry, W. Gerth, F. Gulland, J. Hildebrand, D. Houserp, T. Hullar, P.D. Jepson, D. Ketten, C.D. Macleod, P. Miller, S. Moore, D.C. Mountain, D. Palka, P. Ponganis, S. Rommel, T. Rowles, B. Taylor, P. Tyack, D. Wartzok, R. Gisiner, J. Mead, and L. Benner (2005/06), "Understanding the impacts of anthropogenic sound on beaked whales," *J. Cetacean Research & Management* 7(3): 177-187.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed this 18 day of April, 2007.

/s/ LINDA S. WEILGART
LINDA WEILGART

UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION

Case No. CV 07-0335-FMC (FMOx)

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL., PLAINTIFFS

v.

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., DEFENDANTS

Date: TBD
Time: TBD

DECLARATION OF HAL WHITEHEAD IN SUPPORT OF PLAINTIFFS' MOTION FOR PRELIMINARY INJUNCTION

I, HAL WHITEHEAD, declare the following:

1. This Declaration is submitted in support of Plaintiffs' motion for a preliminary injunction. The statements contained in this Declaration are true and correct to the best of my knowledge and, in the case of my opinions, I believe them to be true. If called as a witness, I could and would testify competently to the statements contained herein.

2. I hold a Ph.D. in Zoology, a Diploma in Mathematical Statistics, and a B.A. in Pure Mathematics,

which were awarded by Cambridge University. For the past fifteen years, I have been employed as a Professor of Biology at Dalhousie University. I have served on scientific committees concerned with the conservation of marine mammals both for the Canadian government and for intergovernmental organizations such as the International Whaling Commission (IWC) and the International Union for the Conservation of Nature (IUCN).

3. I have authored or co-authored over 150 scholarly publications in the field of marine biology, population ecology, and the use of statistical analysis in biological research. A significant portion of my work as a researcher has been concerned with bioacoustics, primarily with regard to the role that sound plays in the ecology of whales, especially sperm whales and beaked whales. Another major portion of my work has been devoted to population analyses of marine mammals. My curriculum vitae and list of publications are attached.

4. The conclusions I draw and the opinions I express are supported by texts and research that other experts in my field consider reliable.

5. It is my expert opinion that the extensive use of high-intensity tactical sonar during major exercises off Southern California constitutes a significant and substantial risk to cetaceans in the region and particularly to species of beaked whales.

6. The monitoring and mitigation proposed by the Navy would do little to prevent impacts on cryptic species of cetaceans, particularly beaked whales. The best available evidence from the 2000 Bahamas stranding indicates that mortalities of beaked whales can occur well beyond the 1-2 kilometer power-down zone that the

Navy would maintain; and even within this zone, the ability of observers to detect beaked whales and other cryptic species will be extremely low. Based on my years of field experience, it seems implausible to me that a diving beaked whale or sperm whale could effectively avoid a fast-moving sound source. Given the reportedly fast pace of the Navy's exercises and the species' long dive times, there is nothing to prevent an operating vessel from passing directly over a submerged beaked whale.

7. I am deeply concerned about the potential for population-level impacts on beaked whales and other cetaceans off California. While little is known about the population biology of beaked whales, recent work on the genetics of Cuvier's beaked whales (*Ziphius cavirostris*) has begun to show differentiation at the regional level.[1] One genetically distinct population that has been studied is the northern bottlenose whale (*Hyperoodon ampullatus*) off Nova Scotia, which my research group has surveyed for many years. About 34% of this population can be found, at any time, within an ocean area about 25 kilometers across.[2] Other beaked whale populations that are small and geographically discrete or concentrated, like those of the northern bottlenose whales off Nova Scotia, would be extremely vulnerable to harm

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[1] M.L. Dalebout, K.M. Robertson, A. Frantzis, D. Engelhaupt, A.A. Mignucci-Giannoni, R.J. Rosario-Delestre, and C.S. Baker (2005), "Worldwide structure of mtDNA diversity among Cuvier's beaked whales (*Ziphius cavirostris*): implications for threatened populations," *Molecular Ecology* 14: 3353-3371.

[2] S. Gowans, H. Whitehead H., J.K. Arch, S.K. Hooker (2000), "Population size and residency patterns of northern bottlenose whales (*Hyperoodon ampullatus*) using the Gully, Nova Scotia," *Journal of Cetacean Research and Management* 2: 201-210.

from even transient and localized mid-frequency sonar exercises. The presence of numerous beaked whale species in the region—including one species, Perrin's beaked whale (*Mesoplodon perrini*), whose known range is limited to the lower California coast—would present reason for strong caution.

8. In the case of the 2000 mass mortality of whales in the Bahamas, only a few of the Cuvier's beaked whales that had been photo-identified over a nine-year period have since been resighted and, as of 2005, fewer than ten individuals had been observed to repopulate the area (Balcomb and Claridge 2001; Claridge 2006; K. Balcomb and D. Claridge, pers. comm.).[3] No Cuvier's beaked whales were sighted during a 20-month period that followed the strandings, despite increased survey effort in 2000 and 2001 (Claridge 2006). The slow repopulation rate indicates that a serious local population effect may have occurred. In general, the low rate of increase in species such as beaked whales would make them less capable of recovering from a population-level impact if one occurs (Whitehead et al. 2000).[4]

9. It appears that the Navy has not assessed the potential for cumulative and synergistic impacts on California and Eastern Tropical Pacific populations of ma-

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[3] K.C. Balcomb and D.E. Claridge (2001). "A mass stranding of cetaceans caused by naval sonar in the Bahamas," *Bahamas Journal of Science* 8(2): 2-12; D.E. Claridge (2006). "Fine-Scale Distribution and Habitat Selection of Beaked Whales," M.S. thesis, University of Aberdeen, UK, 119pp.

[4] H. Whitehead, R.R. Reeves, and P.L. Tyack (2000). "Science and the conservation, protection, and management of wild cetaceans," pp. 308-332 in J. Mann, R.C. Connor, P.L. Tyack, and H. Whitehead (eds.), *Cetacean Societies*, U. Chicago Press, Chicago.

rine mammals. Most remarkable to me, the Navy seems to model each exercise as though only one acoustic source were operating, even though, in some exercises, several ship-based sonars and other systems would be active. This approach fails to represent the complex sound field that may be formed when several sources operate simultaneously or in close combination. Such a sound field could be significantly more difficult for animals to avoid. Further, the Navy has not meaningfully considered the cumulative impacts of the fourteen exercises under review together with past and future major exercises, or with other sonar training that would take place in the same region.

10. Given the lack of any significant monitoring effort, the extent to which previous Navy exercises have caused mortalities or affected survival and reproduction in California's cetacean populations is unknown. Nor is it possible to draw conclusions about population-level impacts from existing abundance data. Limitations in survey effort in the Southern California Bight and Eastern Tropical Pacific make it highly unlikely, for most marine mammal species, that even a precipitous decline in population abundance would be detected (see Taylor et al. 2007).[5]

11. Without evaluating the cumulative effects of the Navy's activities on biologically important behaviors such as mating and foraging, any conclusions about the impacts of major naval exercises on California populations would not be scientifically valid. The fact that

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[5] B.L. Taylor, M. Martinez, T. Gerrodette, J. Barlow, and Y.N. Hrovat (2007). "Lessons from monitoring trends in abundance of marine mammals." *Marine Mammal Science* 23: 157-175.

these exercises would recur fourteen times over two years, are likely to impact some individuals repeatedly, and would result, even according to the Navy's modeling, in a very high number of significant effects, underscores the need for a biologically meaningful analysis. The Navy's assumption that all impacts would be short-term in nature disregards the clear potential for increased stress and decreased growth and reproduction rates, and is fundamentally insupportable.

12. The California Coastal Commission has recommended sensible mitigation measures, such as avoidance of areas containing high concentrations of marine mammals, avoidance of the gray whale migration, and powering down in conditions of poor visibility and at nighttime and in surface ducting conditions. These measures are likely to be effective and helpful in reducing the risk of sonar training to the marine environment and its inhabitants, and for that reason I strongly support them. Mitigation that distances noise sources from marine life and reduces the power, duty cycle, or duration of the noise has the greatest chance of achieving its purpose.

13. I am profoundly troubled not only about the impacts that the Navy's southern California exercises will have on local populations of cetaceans, but about the dangerous precedent it would set on an issue of major conservation concern.

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed this 18 day of April, 2007.

/s/ HAL WHITEHEAD
HAL WHITEHEAD

DEEP-WATER TAPHONOMY OF VERTEBRATE CARCASSES: A WHALE SKELETON IN THE BATHYAL SANTA CATALINA BASIN

Peter A. Allison, Craig R. Smith, Helmut Kukert, Jody W. Deming, and Bruce A. Bennett

Abstract.—Taphonomic processes in deep-water environments differ markedly from those in shallow waters. These differences are illustrated by the preservational style of a large cetacean skeleton lying at the bottom of the Santa Catalina Basin in 1,240 m of water. The degree of skeletal articulation contrasts with that documented in the shallow North Sea where gas-filled, buoyant carcasses disarticulated during flotation. Increased hydrostatic pressure at greater depth is presumed to have prevented the whale carcass from floating and promoted increased levels of preservation. We present a model that relates gas evolution during decay to carcass buoyancy with depth. Application of this model may ultimately allow the degree of skeletal articulation to be used as a rough index of paleobathymetry.

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Introduction

Taphonomic research comprises geological case studies, and observations and experiments in Recent environments. The former involves documentation of preserved biota, descriptions of preservational style, and correlations with outcrop sedimentology and regional paleogeography. This approach leads to the definition of what Brett and Baird (1986) referred to as taphofacies, that is, temporally and spatially recurrent associations of preservational style with specific sedimentological characters. However, this methodology is largely restricted to documenting the effects rather than the nature of taphonomic processes. Although this line of reasoning does provide some data on possible mechanisms' the vagaries of preservation invariably blur the evidence. The actualistic approach, on the other hand, allows direct observation of taphonomic processes. Preservational experiments performed in Recent environments or controlled laboratory systems produce an empirical data base of cause (taphonomic process) and effect (preservational bias). Taphonomic experiments, however, are usually short term, rarely lasting longer than a year, which limits the geological application of results (Carhew and Bosence [1986] is an exception). A further problem is variation in taphonomic processes through geological time. For example, the evolution of bioturbating organisms (Thayer 1983) and of scavenging crustaceans (Sepkoski 1981) may profoundly affect preservational processes across time. However, even such changes can be evaluated experimentally (see, e.g., Plotnick 1986). An additional problem is the range of environments accessible as locations for experiments. Experimentation in aquatic envi-

ronments, especially those in deep water, may require specialized technical expertise or equipment. For this reason, most marine taphonomic experiments have concentrated on intertidal or shallow shelf systems and have virtually ignored deeper shelf or bathyal environments (but see Callender et al. 1990). Considering the small areal percentage of the globe represented by intertidal and shallow shelf systems, the need for taphonomic research in deep-water systems is clear.

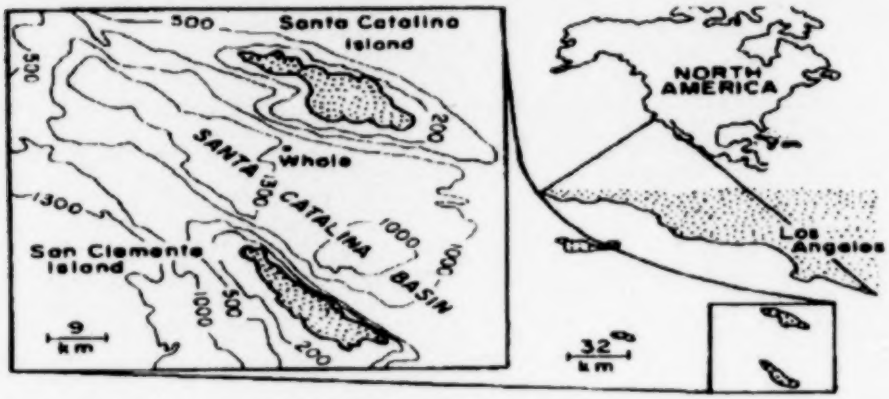

FIGURE 1. Location of whale skeleton.

Geological case studies have outlined the different preservational processes into two systems (see, e.g., Norris 1986) but to date little has been contributed to the data base.

The discovery of a large cetacean skeleton in the Santa Catalina Basin by oceanographers using the deep-sea research vessel (DSRV) *ALVIN* in December 1987 (Smith et al. 1989) provided a unique opportunity for a deep-water taphonomic study. A return visit to the site in November 1988 was made to document the effect of the carcass fall on local benthic ecology (Smith et al.

1989) and to study the preservational processes operating on the carcass.

Depositional Environment

The island, submarine banks, and basinal areas of the Southern California Continental borderland are the topographic expression of a complex tectonic system at a convergent transform plate margin. The Santa Catalina Basin (SCB) is one of 14 basins in the area, lying about 30 km of the Californian mainland between the islands of Santa Catalina and San Clemente (Fig. 1). It is about 98 km long and 30 km wide, with its long axis trending northwest/southeast, roughly parallel with the mainland coast. The bed of the basin is covered with sediment, is relatively flat, and has a surface area of approximately 2,236 km^2.

* * * * *

Should a carcass sink in deep enough waters, it cannot be refloated by decay gas. At pressures in excess of 200 atm the gut biota of surface dwellers may be inhibited, reduced temperature at depth will have the same effect, particularly in organisms lacking body insulation and adapted to warmer temperatures. In such an environment, decay would have to be initiated by the invasion of seafloor bacteria adapted to ambient temperature and pressure and may be considerably slowed. Biological disturbance is the most probable cause of disarticulation in deep-water system. Since all scavenging and bioturbation are prevented in anoxic waters, articulated skeletons will be preserved. In aerobic waters however, small carcasses are rapidly stripped of flesh with ensuing disarticulation (Smith 1985). Catastrophic burial may prevent biological disturbance, de-

pending on the depth of sediment overburden and the size relationship between the bioturbatory organism and the skeletal element. Since hydrostatic pressure can exert a control on the level of preservation of vertebrates, it may be possible to use the degree of articulation as a rough means of estimating paleobathymetry.

[Diagram Omitted]

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ERRATUM—Walter Zimmer of SACLANT has pointed out the authors' error in mixing Zulu and local time for the beaked whale strandings reported in Greece (see www.saclantc.nato.int/whales). The time difference between onset of NATO sonar operations and stranding of the first of twelve whales reported was four hours, not one hour as reported by Balcomb and Claridge. The author's conclusion that extreme aversion to sonar signals at RL less than 180 dB re 1 μPA remains, however.

* * * * *

A MASS STRANDING OF CETACEANS CAUSED BY NAVAL SONAR IN THE BAHAMAS

KENNETH C. BALCOMB III AND DIANE E. CLARIDGE

INTRODUCTION

With the advent of powerful military sonar systems in recent decades, worldwide attention has focused on the potential effects of sonar on whale behavior and survival, with particular concern over the coincidence of beaked whales (Order Cetacea, Suborder Odontoceti, Family Ziphiidae) mass strandings concurrent with or following naval maneuvers. In this report we provide documentation and discussion of a very significant multi-species mass stranding of cetaceans, predominantly beaked whales, in the northern Bahamas on March 15, 2000 coincident with a US and allied naval transit

through the area. We also provide a brief summary of office reports released describing preliminary findings of evidence obtained from specimens that we collected in order to assist in determining the cause of this anomalous stranding. We propose a biophysical explanation for beaked whales sensitivity to underwater sound that could cause them to be more susceptible to injury from powerful sonar systems than other cetaceans. We also offer suggestions for mitigating this problem in future naval training operations.

BACKGROUND

Mead (pers. comm., June 2000) has complied nineteen records of mass strandings of beaked whales worldwide since 1963, about the time that a new generation of powerful mid-frequency (MF) military sonar was first deployed. Strandings of these "rare" whales prior to 1963 were typically of single individuals, often representing the only records of the existence of these enigmatic animals. Of particular note: four Cuvier's beaked whales (*Ziphius cavirostris*) mass stranded in Bonaire in 1974 (Van Bree and Kristensen, 1974); twelve Cuvier's beaked whales and a Gervais' (Antillean) beaked whale (*Mesoplodon europaeus*) mass stranded in the Canary Islands in 1985, three Cuvier's beaked whales and a northern bottlenose whale (*Hyperoodon ampullatus*) stranded there in 1988, and a total of twenty-four beaked whales (mostly Cuvier's) stranded in the Canary Islands in 1989 (Simmonds and Lopez-Juraco, 1991); twelve Cuvier's beaked whales stranded in Greece in 1996 (Frantzis, 1998); and, in mid-March 2000 at least fifteen beaked whales, two minke whales and a dolphin stranded in the northern Bahamas (this report).

All of these reports note the coincidence of naval maneuvers around the time of the mass strandings and most of them initially reported the whales as swimming ashore alive and subsequently stranding, as opposed to being carcasses drifting in with ocean currents. Although the circumstances of these mass strandings have been observed on multiple occasions, evidence for cause and effect to explain them has been elusive. Since Mead's report was prepared one year ago, there have been two additional reports of mass strandings of beaked whales, at least one of which was coincident with naval activities. This stranding "problem", particularly involving beaked whales, in the wake of naval maneuvers is apparently not going away, and it may be getting worse as new and powerful sonar systems proliferate.

In the case of the March 2000 strandings in the Bahamas, the US Navy after five weeks of well-publicized denial ultimately reported that there were coincident naval activities involving an east-to-west transit of US and foreign warships through the Northeast and Northwest Providence Channels, when and where the whales stranded (CINCLANTFLT, Press Release 21 April 2000). It was subsequently reported that "several" of these transiting warships were operating standard, hull mounted tactical sonar within normal mid-range frequencies (MF), power outputs and duty cycles (3.5 kHz and above, 235 dB re 1 microPascal (luPa) at one meter, pings of one tenth of a second or less on a duty cycle of 24 seconds (CHINFO, June 2000). In January of this year, the Navy (Johnson, 2001) acknowledged that three submarines and seven surface ships were involved in this transit, operating six MF sonars with standard outputs and modes, and that SURTASS LFA (acronym for

US Navy LF system) was not involved. No other acoustic details have been released; therefore, we can only estimate (rather than calculate) the whales' received level (RL) sensitivity to the reported MF sonar and the approximate zone of influence for response or injury.

The US Navy conducted an internal review of this transit that showed there was a surface duct approximately 400 to 500 feet (120 to 150 meters) deep in which sound propagated better than it did below that depth. In this surface duct, within a range of 1000 meters from a ship's sonar the sound level reportedly dropped in intensity to less than 180 dB re luPa, which has previously been considered a "safe" level for single ping non-serious injury to whales (DOEIS, 1999). We surmise that, with multiple ship's sonar systems operating in the area at 235 dB source level (SL), the sound pressure level from sonar was at times greater than 150 dB re luPa **throughout** the NE and NW Providence Channels (from North Eleuthera to Abaco and Grand Bahama) on March 15, 2000. Adjusting for the different reference level for in-air measurement of sound of equivalent acoustic intensity, this level is significantly above the threshold of pain in human hearing, and it approaches the level for TTS (a temporary threshold shift or impairment to hearing that may last from a few minutes to a few days).

* * * * *

SUMMARY

Whether of not there is PTS injury demonstrated for any whales that stranded in the Bahamas coincident with the Navy sonar incident of March 15, 2000, the whales certainly fled from the area and many, if not all, of them died. The aversive and injurious impacts of in-

tense low and mid-frequency sonar, either of standard (1/10 sec MF as in the Bahamas) or of long duration (4-6 second, LFA and MF, as in Greece), on beaked whales in particular is occurring as significant distances well beyond the current mitigation distance (1 km) used by the US Navy. This impact distance can be easily calculated for the well-documented strandings, such as in Greece and the Bahamas, and it is 20 kilometers or more — near caustics well over the horizon of shipboard observers. Multiple sonar "pings" and oceanographic and topographic conditions undoubtedly contributed to efficient sound propagation and regions of enhancement in the Bahamas situation, but the whales' sensitivity was not only behavioral, it was physiological and could reasonably be expected whenever similar received levels of similar frequencies of similar duration occur. None of the Cuvier's beaked whales that we had documented in our nine-year study have returned since the March 15 naval exercise, and none of the "rescued" whales have been seen again, either. We consider it entirely plausible that most, if not all, of the local population of this species was killed on that day; or, at the very least, there has been a very serious displacement of these whales. In the long run, we simply cannot expect cetaceans to habituate to pressure induced vestibular dysfunction, cerebral hemorrhage and cochlear squeeze, etc. that is resulting from some naval sonar operations. Mitigation of naval activities during peacetime exercise appears to be the only reasonable solution to this problem.

* * * * *

UNDERSTANDING THE IMPACTS OF ANTHROPOGENIC SOUND ON BEAKED WHALES[1]

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This paper is dedicated to the memory of Dr. Edward Thalmann (1945-2004).

ABSTRACT

This review considers the effect of anthropogenic sound on beaked whales[2]. Two major conclusions are presented: (1) gas-bubble disease, induced in supersaturated tissue by a behavioural response to acoustic exposure, is a plausible pathologic mechanism for the morbidity and mortality seen in cetaceans associated with sonar exposure and merits further investigation; and (2) current monitoring and mitigation methods for beaked whales are ineffective for detecting these animals and protecting them from adverse sound exposure. In addition, four major research priorities, needed to address information gaps on the impacts of sound on beaked whales, are identified: (1) controlled exposure experiments to assess beaked whale responses to known sound stimuli; (2) investi-

gation of physiology, anatomy, pathobiology and behaviour of beaked whales; (3) assessment of baseline diving behaviour and physiology of beaked whales; and (4) a retrospective review of beaked whale strandings.

KEYWORDS: BEAKED WHALES; ZIPHIIDAE; NOISE; MANAGEMENT; ACOUSTICS; CONSERVATION; STRANDINGS

* * * * *

Behavioural response

Beaked whales may respond to sound by changing their behaviour, which could lead to a stranding event prior to the onset of physical trauma (Fig. 1, left). For example, in areas where deep waters occur in close proximity to shallow waters (e.g. 'canyon areas' of the Bahamas, oceanic islands), beaked whales may swim into shallow waters to avoid certain sounds and could strand if they are unable to navigate back to deeper waters. The end result of stranding may be that animals swim away, are pushed off, or die of hyperthermia or other stress-related causes resulting from the actual stranding. Evidence that some of the stranded beaked whales in the Bahamas succumbed to cardiovascular collapse due to hyperthermia (Anon., 2001) is consistent with this mechanism, although the final pathology report for this stranding event is still pending and the proposed mechanism does not account for some of the trauma observed in that event (e.g. subarachnoid haemorrhage). The array of pathologies (Anon., 2001; Fernandez, 2004) observed in the beaked whales from the Bahamas and Canary Islands mass stranding in 2002 suggest injuries in addition to those typical of the physical effects of stranding itself.

Behavioural response leading to tissue damage

Acoustically induced behavioural responses may lead to tissue damage prior to stranding. Such responses may include altered dive profiles, remaining at the surface for prolonged periods or remaining at depth. Physiological responses could include hypoxia (from longer than normal time at depth or increased energy or oxygen use at a given time) or elevated nitrogen supersaturation of tissues, leading to formation of gas bubbles (from altered dive profiles).

One potential mechanism that deserves particular consideration is an acoustically induced behavioural change (dive response) that leads to formation of significant gas bubbles, which damage multiple organs or interfere with normal physiological function. Such a mechanism would be similar to decompression sickness in human divers and would have two parts: a dive response precipitating adverse gas bubble formation and pathology. Because many species of marine mammals make repetitive and prolonged dives to great depths, it has long been assumed that marine mammals have evolved physiological mechanisms to protect against the effects of rapid and repeated decompressions. To date, two physiological adaptations have been identified that may afford protection against nitrogen gas supersaturation: lung alveolar collapse at depths of 20-70m and 'elective circulation' involving vasoconstriction to the peripheral circulation during diving (Kooyman *et al.*, 1972; Ridgway and Howard, 1979; Zapol *et al.*, 1979; Davis *et al.*, 1983). However, Ridgway and Howard (1979), the only researchers who have assessed nitrogen gas accumulation in a diving cetacean, trained bottlenose dolphins (*Tursiops truncatus*) to dive repeatedly to

100m and found that the muscle of the dolphin was substantially supersaturated with nitrogen gas. From nitrogen washout curves, they estimated that this species experienced lung collapse at approximately 70m of depth, thus making it susceptible to nitrogen gas accumulation when making repetitive dives shallower than 70m. Houser *et al.* (2001) used the data from Ridgway and Howard (1979) to model the accumulation of nitrogen gas within the muscle tissue of other marine mammal species. The model was limited in that it necessarily assumed similar depths of lung collapse for all cetaceans and that exchange of nitrogen gas between tissue compartments ceased below the depth of lung collapse. The model predicted that those cetaceans that dive deep and have slow ascent/descent speeds would have tissues that are more supersaturated with nitrogen gas than other marine mammals. While the predictions for beaked whales were in excess of 300% supersaturation at the surface, this should be viewed cautiously because of the limitations of the model used and the problems of using extrapolations from other species.

Dive profiles of three species (Cuvier's and Blainville's beaked whales and bottlenosed whales, *Hyperoodon ampullatus*; Hooker and Baird, 1999; P. Tyack, unpub. data) suggest that at least some species of beaked whales have dive profiles not previously observed in other marine mammals. These led to the suggestion that some beaked whales may chronically accumulate nitrogen in a manner not dissimilar to human 'saturation divers'. The critical components of this dive sequence include: (1) very deep and long foraging dives (to as deep as 2km and lasting as long as 90mins); (2) relatively slow, controlled ascents, followed by (3) a

series of 'bounce' dives to between 100-400m depth (Hooker and Baird, 1999; P. Tyack, unpub. data). Thus, if any part of this dive sequence was affected by a behavioural response to sound (e.g. extended time at surface without the requisite bounce dives), it could induce excessive levels of nitrogen supersaturation in tissues, driving gas bubble and emboli formation in a manner similar to decompression sickness in humans.

It is clear that long-term studies on the behaviour of beaked whales to better define a baseline of 'normal' behaviour are needed. Obtaining baseline dive profiles via several methods over extended periods (e.g. D-tags, time-depth recorders) is especially important. We unanimously agree that highest priority should be given to designing controlled-exposure experiments to investigate the responses of beaked whales to anthropogenic sounds. Nowacek *et al.* (2004) conducted a controlled exposure experiment in northern right whales (*Eubalaena glacialis*) responding to a novel alerting stimulus. This study demonstrated that whales responded to stimuli at received sound levels as low as 133dB (re: 1μPa), with an immediate ascent followed by an extended surfacing interval. It was hypothesised that abnormal changes in dive behaviour in beaked whales could precipitate pathologic bubble formation in tissues. By applying innovative technology, researchers can further investigate behavioural responses and begin to examine physiological responses to sound. Designing exposure studies that are acceptable from both a scientific and animal welfare perspective is difficult. We recommend that the best way to design such experiments is through a workshop of appropriate experts.

Determining whether beaked whales are susceptible to developing gas bubbles due to changes in behaviour or physiological condition may prove to be even more difficult. To date, while there is no evidence of *in vivo* bubble formation in any marine mammals (but see Jepson *et al.*, 2003; 2005; Fernandez *et al.*, 2004), it is also true that no studies have been conducted to specifically look for the formation of intravascular bubbles during or following repetitive diving. Although it is possible to conduct such studies with shallow diving species such as bottlenose dolphins, until such work is conducted with deep-diving species such as beaked whales, it will not be possible to gain an insight into this possibility. As noted above, marine mammals have long been thought to have evolved anatomical, physiological and possibly behavioural adaptations to their marine environment to mitigate the risk of bubble formation (e.g. Harrison and Tomlinson, 1956; Ridgway and Howard, 1979; 1982; Falke *et al.*, 1985; Ponganis *et al.*, 2003). Despite these adaptations, recent theoretical and pathological evidence suggests that cetaceans can produce *in vivo* bubbles or experience tissue injury as a result (Jepson *et al.*, 2003; 2005; Fernandez *et al.*, 2004; 2005). These data and interpretations are the subject of continuing scientific debate (Fernandez *et al.*, 2004; Piantadosi and Thalmann, 2004).

Modelling predictions (Houser *et al.*, 2001) support the hypothesis that beaked whale tissues could be greater than 300% saturated with nitrogen. *Post mortem* evidence of acute and chronic gas emboli-associated lesions in liver, kidney, spleen, and lymph nodes of eight dolphins, one harbour porpoise (*Phocoena phocoena*) and one Blainville's beaked whale that stranded in the

United Kingdom (Jepson *et al.*, 2003; 2005) also support this hypothesis. In addition, gas and fat emboli and widely disseminated microvascular haemorrhages were found in ten beaked whales examined in the Canary Islands mass strandings event in September 2002 (Jepson *et al.*, 2003; Fernandez *et al.*, 2004; 2005). In humans and experimental animals, such gas and fat emboli released into the venous system and deposited in the pulmonary capillary beds may travel through arterio-venous shunts into the systemic circulation. Prior to, or concomitant with this, respiratory and cardiovascular dysfunctions may occur with a biphasic response at the brain-spinal cord level, an initial, venous embolic obstruction and vasoconstriction, followed by secondary vasodilatation and prolonged (reactive) hyperaemia (Shigeno *et al.*, 1982). This haemodynamic process may explain the widespread cerebral congestion and edema, with spongiosis, intracranial perivascular haemorrhages and subarachnoid and intraventricular haemorrhages described in the beaked whale mass strandings.

A number of areas of research are required to further investigate whether beaked whales are susceptible to gas bubble formation, either as a function of altered behaviour or as the direct impact of sound on existing bubble nuclei. It is important that detailed necropsies are conducted of all freshly dead beaked whales, especially those whose deaths are correlated in both space and time with sound events. These necropsies should be conducted under laboratory procedures with rigorous protocols, e.g. opening the braincase underwater before the head is separated from the body or tying off primary vessels prior to removal, so as to avoid introducing bubbles during the necropsy. A standardised protocol for

beaked whale necropsies is being developed to address these needs.

Experimental studies are needed to determine whether marine mammals can develop *in vivo* gas bubbles due to alterations in their dive profiles and to document precise levels of nitrogen supersaturation necessary to invoke such bubble formation. Specifically, ascertaining the onset of lung collapse and its impact on nitrogen gas kinetics is critical to determining what physiological effects any changes in dive profile might have on tissues. In the absence of live beaked whales for such studies, comparative studies could be conducted using marine mammals that are accessible and trainable. Physiological effects in shallow diving cetaceans and deep divers should be compared cautiously as deep divers will experience different physiological demands from environmental conditions at 1-2 km and will likely have different adaptations and responses to those conditions. The depth at which lung collapse occurs is key to any modelling of nitrogen supersaturation because lung collapse prevents gas exchange and nitrogen absorption by the blood. The depth at which the lung collapses might be estimated using bottlenose dolphins with arterial blood sampling and blood nitrogen analyses. These results could then be compared to *post mortem* determination of lung collapse by compression testing of the lungs of a bottlenose dolphin carcass. Comparable results would support the use of *post mortem* testing of beaked whale lungs to determine the depth at which lung collapse occurs in those species. To test the hypothesised scenario that adverse gas bubble formation may result from a change in dive behaviour, it will be necessary to determine whether beaked whale tissues

supersaturate with nitrogen and if so, to combine that information with dive profiles and potential changes in dive profiles. The scenario of gas bubble formation secondary to a behavioural response is plausible and merits rigorous investigation.

* * * * *

Primary tissue damage leads to death

Some of the above mechanisms (i.e. gas bubble disease, haemorrhagic diathesis, acoustic resonance) could lead to lethal tissue damage. For example, the intracranial haemorrhage seen in the Bahamas and Canary Islands animals could have been caused by a stress response and associated haemorrhagic diathesis or bubble formation rupturing local capillaries. Although some of the stranded beaked whales were found dead, it is not clear whether these animals were alive when they first stranded. Several animals in all the events stranded alive and some either swam away or were pushed offshore. Even though their eventual fate is unknown, they did not die immediately. Determining whether sound exposure causes tissue damage that leads directly to death will be difficult and likely will require a process of elimination regarding other possible mechanisms. Testing the hypothesis that death results directly from sound-related tissue damage will be facilitated greatly by access to freshly stranded specimens that have been exposed to sound.

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"GAS AND FAT EMBOLIC SYNDROME" INVOLVING A MASS STRANDING OF BEAKED WHALES (FAMILY *ZIPHIIDAE*) EXPOSED TO ANTHROPOGENIC SONAR SIGNALS

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Abstract. A study of the lesions of beaked whales (BWs) in a recent mass stranding in the Canary Islands following naval exercises provides a possible explanation of the relationship between anthropogenic, acoustic (sonar) activities and the stranding and death of marine mammals. Fourteen BWs were stranded in the Canary Islands close to the site of an international naval exercise (Neo-Tapon 2002) held on 24 September 2002. Strandings began about 4 hours after the onset of midfrequency sonar activity. Eight Cuvier's BWs (*Ziphius cavirostris*), one Blainville's BW (*Mesoplodon densirostris*), and one Gervais' BW (*Mesoplodon europaeus*) were examined postmortem and studied histopathologically. No inflammatory or neoplastic processes were noted, and no pathogens were identified. Macroscopically, whales had severe, diffuse congestion and hemor-

rhage, especially around the acoustic jaw fat, ears, brain, and kidneys. Gas bubble-associated lesions and fat embolism were observed in the vessels and parenchyma of vital organs. In vivo bubble formation associated with sonar exposure that may have been exacerbated by modified diving behavior caused nitrogen supersaturation above a threshold value normally tolerated by the tissues (as occurs in decompression sickness). Alternatively, the effect that sonar has on tissues that have been supersaturated with nitrogen gas could be such that it lowers the threshold for the expansion of in vivo bubble precursors (gas nuclei). Exclusively or in combination, these mechanisms may enhance and maintain bubble growth or initiate embolism. Severely injured whales died or became stranded and died due to cardiovascular collapse during beaching. The present study demonstrates a new pathologic entity in cetaceans. The syndrome is apparently induced by exposure to mid-frequency sonar signals and particularly affects deep, long-duration, repetitive-diving species like BWs.

Key words: Beaked whales; fat emboli; gas emboli; marine mammals; mass stranding; naval exercises.

The possibility that exposure to sonar stimuli could lead to the stranding of cetaceans is an issue of increasing interest because of recent strandings temporally and geographically coincident with naval sonar operations.[1,11,17,61,66,67] BWs (family *Ziphiidae*), one of the deepest-diving whales, are of particular interest because of a notable relationship between military operations employing midfrequency sonar and BW mass strandings.[1,11] Typically, strandings of BWs prior to 1963,

when certain types of midfrequency sonar equipment began to be employed, involved single individuals.[1] Subsequently, mass strandings of BWs linked with naval exercises have been described in several locations: Bonaire in 1974, the Canary Islands in 1985, 1988, and 1989, Greece in 1996, and the Bahamas in and sonar exposure is proposed to occur when tissues 2000.[1,11,17,61,66,67]

A mass stranding of BWs in the northern Bahamas Islands causally incriminated the use of tactical, midfrequency sonar because of its close temporal association with such naval maneuvers.[1,11] Hemorrhage in the brain, ears, and acoustic fat was reported as the main lesion found in some BWs in the Bahamas stranding. A number of acoustically medicated behavioral modifications and pathophysiologic pathways were proposed to have caused these lesions; however, conclusive evidence linking a mechansim to the lesions was lacking.[11]

Past research efforts on the potential for anthropogenic sound to affect marine mammals have focused on auditory effects and behavior modifications following sound exposure.[11,19,25,53] Nonauditory consequences of exposure to sound have received less attention.[6,23] A hypothesized, nonauditory link between strandings and sonar exposure is proposed to occur when tissues are supersaturated with dissolved nitrogen gas, and bubble growth-facilitated diffusion is stimulated within tissues.[6,23] Bubble growth could result in emboli-induced tissue separation and increased localized pressure in tissues, the presumed cause of decompression sickness (DCS) in human divers.[16,31,33,46,47] Following the initial stimulation of bubble growth in tissue that has been highly supersaturated with gas, growth could continue in the absence of a persistent acoustic stimulus. It is

believed that marine mammals have evolved adaptations to prevent deleterious, nitrogen bubble formation.[34,50,57] However, to our knowledge, no studies have specifically addressed whether nitrogen bubble formation in tissue occurs in diving marine mammals. Recently, researchers have presented strong evidence of chronic, gas bubble lesions in the liver and kidney of different stranded cetacean species.[25] These lesions suggest that gas bubbles formed in vivo can persist and generate fibrosis in diving cetaceans.[14,25] Such emboli presumably cause ischemia and would explain the formation of chronic, bony lesions, consistent with those of dysbaric osteonecrosis (DON), described in sperm whales (*Physeter macrocephalus*).[40]

DCS is the result of the supersaturation of body tissues with nitrogen gas and the subsequent release of nitrogen gas bubbles.[16,26] In human divers, DCS is typically caused by rapid decompression following dives using compressed air[8,16] and also has been reported during repetitive, breath-hold dives.[15,33,47,52] Until the lungs collapse during a dive, alveolar gases are absorbed into the blood proportional to hydrostatic pressure. The amount of gas dissolved in specific tissues depends on dive depth and duration, descent and ascent rates, lipid content of the tissue, and surface time between successive dives.[16,26,42]

A number of anatomic, physiologic, and behavioral adaptations of marine mammals have been proposed to guard against nitrogen bubble formation.[12,34,50,54–57] Due to alveolar collapse, gas exchange does not occur at depths greater than 70 m in dolphins[46] or at depths greater than 30–50 m in seals.[41] Pinnipeds and shallow-diving cetaceans are thought to be at low risk of devel-

oping a high nitrogen load, either because lung collapse obviates gas uptake at deeper depths or because their typical dive profiles result in only modest tissue nitrogen accumulation.[21] BWs[22] are theoretically at a greater risk of developing deleterious tissue–nitrogen levels because their deep prolonged dives increase during the period in which nitrogen uptake can occur prior to lung collapse.[21] Thus, deep-diving cetaceans may be more susceptible to the action of high-intensity acoustic energy on preexisting gas nuclei.[6,23]

The presence of gas emboli is an important finding in human DCS, but pulmonary fat emboli have also been reported with DCS-related, severe cardiorespiratory disturbances.[26,29] Systemic fat embolism is a secondary effect of the abrupt pressure changes observed with DON, a condition initiated by the evolution of gas bubbles in nitrogen-supersaturated fatty marrow after inadequate decompression.[26,29,30] The clinical manifestations of fat emboli depend on the volume of fat reaching the lungs and other affected tissues. Fat emboli are not reversible with recompression therapy. The severity of fat emboli–induced clinical disease may be progressive as survival time after trauma increases.[10,31,43,49,62]

Forensic pathologists associate fat emboli with bone fractures, diabetes mellitus, burns, acute pancreatitis, fat and soft tissue injury, and DCS with acute DON.[10,26,30,31,43,49,62] These entities are underdiagnosed clinically and at postmortem examination.[10,31,49] The pathogenesis of fat embolism is not fully understood, and it is likely multifactorial.[21] Two mechanisms have been proposed for the development of fat emboli. First, direct entry of fat emboli into the bloodstream after trauma may cause direct, toxic injury in the lung and

produce respiratory insufficiency when free fatty acids are released from fat tissues.[24,62] A second mechanism involves the generation of fat emboli from plasma lipoprotein disruption and coalescence of lipid at the intravascular gas bubble interface.[24]

Fat emboli have not been reported in stranded cetaceans, and reports of gas bubble lesions are uncommon.[13,14,25] This report describes the pathologic findings in BWs involved in a mass stranding that occurred coincidentally with naval exercises in the Canary Islands. Both gas bubble lesions and fat emboli are documented in these whales, and a hypothesis is presented to explain the association of mass stranding of BWs and sonar exposure.

Materials and Methods

The southeastern coast of Fuerteventura (Canary Islands) is well known for BW aggregations due to its ocean depths greater than 1,000 m within a few hundred meters of the coast. On 24 September 2002, 14 BWs were stranded on the beaches of Fuerteventura and Lanzarote islands. Seven whales (one female *Mesoplodon densirostris*, one female *Mesoplodon europaeus*, and five male *Ziphius cavirostris*) died. The remaining seven live whales were returned to deeper waters. During the next 3 days, three male BWs and one female BW (*Z. cavirostris*) were found dead either on the coast or floating offshore (Table 1).

The strandings were temporally associated with naval exercises involving numerous surface warships and several submarines (maneuvers called Neo-Tapon 2002). The exercise area extended from the coast to up to 40 km away. On 24 September at 9:00 a.m., while examina-

tions of animals were ongoing, warships were readily visible from 1 km to several kilometers from the beaches. Spanish naval sources indicated that tactical, midrange frequency sonar was used during the exercises from 3:00 a.m. to 10:00 a.m. on 24 September 2002.

Postmortem examinations were performed[35] on the beach on 10 animals. External findings were recorded, and internal organs were sampled. The heads were preserved at 4 C and delivered to the Veterinary School at Gran Canaria for detailed dissection. The first six stranded animals (BW-1 through BW-6) were examined postmortem on 24 September, within 12 hours of stranding. Heads were dissected and sampled the next day. BW-7 was found dead offshore on the morning of 25 September. On 25 September, BW-8 and BW-9, both mature males, were found stranded on Lanzarote, and BW-9 was found beached with multiple, postmortem shark bites. BW-10 was found floating close to Fuerteventura on 26 September and was given a postmortem examination on 27 September. All the animals were judged to have died within 24 hours of the first stranded BW that was sighted at 7:00, 24 September 2002. One other whale was recovered but not examined postmortem because of advanced autolysis.

Tissues were collected and stored in buffered 10% formalin immediately or frozen and were later formalin fixed before processing for routine light microscopy. Tissues from stranded animals included: brain, hypophysis, choroid plexus, cervical spinal cord, liver, lung, kidney, heart, lymph nodes, digestive tracts, reproductive tracts, and perilarygeal tissues, including the trachea and thyroid (Table 2). The eyes from BW-4 were collected.

Histologic stains used on frozen, formalin-fixed tissues to detect fat emboli were oil red O stain 22 (ORO) and Sudan black B 23 stain.[2,5] Osmium tetroxide postfixation and paraffin embedding was also used to detect fat emboli.[7] A picric acid technique was used to reduce pigment artifacts when necessary.[5] The best technique for demonstrating fat emboli was the postfixation with the osmium of parffin-embedded tissue. Frozen sections of fixed tissue stained with ORO and Sudan black B stained fat emboli well, but tissue morphology was inferior to osmium postfixation-stained, paraffin-embedded sections. The picric acid technique removes formalin pigment from fixed tissues and demonstrated fat better, but it washed out some of the lipid from tissue sections. Because fat emboli are not commonly assessed in stranded cetaceans, 86 archived samples of lungs of single-stranded cetaceans found on the coasts of the Canary Islands were used as fat emboli controls.

Results

The ambient temperatures during the period of the mass stranding ranged from daytime highs of 24°C to nighttime lows of 17°C. All stranded animals belonged to the family *Ziphiidae*, commonly named BWs. Macroscopically, no systemic, inflammatory, or neoplastic processes were noted in any animal. In BW-1 through BW-7, the lack of external trauma and the lack of marked dermal bruising indicated that blunt trauma was probably not involved in the stranding (Fig. 1). A large amount of fresh, undigested gastric contents was noted in the whales, suggesting a rapid onset of disease and death. Subconjunctival hemorrhages were observed in several animals.

The first (BW-1 to BW-7) carcasses showed marked congestion of all organs, particularly the neck (including the larynx, thyroid gland, and trachea). Multifocal petechiae or severe, extensive ecchymoses were observed in the acoustic fat around the jaws (Fig. 2). Melon fat was examined in only two whales, and some petechiae were observed in each of these whales. Head and neck lymph nodes were enlarged and congested. The lungs were congested and had multiple pleural hemorrhages. A moderate amount of froth was present in the tracheas. The peribullar and pterygoid sinuses were full of white froth. Large cardiac blood vessels were distended. Macroscopic descriptions of the abdominal organs from the first six animals were brief, because they were necropsied rapidly so that sample collection could be finished in natural light. The abdominal lesions included some liver fibrosis, general organ congestion, and marked congestion of large and midsize veins. Hemorrhages were seen in congested kidneys. Parasites (*Crassicauda* sp.) were observed in the kidneys of all animals. Diffuse vascular congestion and some petechiae were observed on the intestinal serosa. Postmortem examinations of BW-7 to BW-10 showed similar macroscopic lesions, and tissues were sampled with the exception of central nervous system (CNS) tissues (Table 2). No detailed macroscopic examination for gas bubbles was conducted in the portomesenteric veins of any whale.

The primary macroscopic cerebral lesions were severe, diffuse, vascular congestion with multifocal-to-extensive subarachnoidal hemorrhages (Fig. 3). Clotted blood was observed bilaterally in the lateral ventricles of some brains, along with severe hemorrhaging around

the proximal cervical spinal cord. The gyri of the brain were swollen and moist. Multifocal hemorrhages were observed in the meninges. Macroscopic gas bubbles that were observed retrospectively in brain photographs taker during the dissections (Fig. 4) were prominent within superficial, midsize, cerebral vessels in some areas.

Histologic lesions in the first seven animals (BW-1 to BW-7) were similar. Severe, diffuse congestion was observed in the large and small cerebral and pial vessels of the gray and white matter of the cerebral hemispheres. Varying severity and extensions of hemorrhaging were observed in the subarachnoid space. In the brainstem and around the proximal cervical spinal cord, severe hemorrhaging was observed in the perivascular spaces associated with congested midsize vessels (Fig. 5a). Large unstained vacuoles that did not stain as fat were observed in some veins and within hemorrhages in the parenchyma or disrupted columns of the erythrocytes in perivascular spaces (Fig. 5b). Intravascular air vacuoles were most numerous in BW-1. Hemorrhages were observed in the white matter of most of the animals, and the adjacent parenchyma often had a spongiotic appearance (edema, Fig. 6). Proteinaceous, perivascular edema fluid and swollen glia surrounded some vessels. Severe, diffuse hemorrhaging was observed consistently around the cervical medulla and associated with the epidural, vascular plexus. Less severe hemorrhaging was observed around the ophthalmic rete of BW-4. Locally extensive conjunctival hemorrhaging sometimes dissected the scleral connective tissue of BW-4. In the proximal, cervical spinal cord, vascular congestion and perivascular edema affected both the white and gray matter.

No cardiac lesions were observed. Pulmonary vascular congestion, vacuoles in midsize veins, atelectasis, and hemorrhage varied from mild to severe among the whales examined. Multifocal, interstitial, interlobular, and subcapsular hemorrhages were prominent in the kidneys. Often, renal interlobular connective tissue was disrupted by venous vacuoles associated with hemorrhaging (Fig. 7). Moderate congestion of the glomeruli and vasa recta with some microhemorrhages were observed in sections of the renal medulla. Multifocal granulomatous nephritis and pyelitis were associated with the parasites observed grossly in all of the kidneys.

All lymph nodes of the head and neck contained large amounts of erythrocytes in the subcapsular and sinusoidal areas. Enlarged subcapsular sinuses had many round-to-oval unstained vacuoles (Fig. 8). Macroscopically, visceral lymph nodes that drained the areas of hemorrhaging had similar changes. Spleens were congested. Livers had moderate-to-severe portal vein congestion, and all livers contained variable numbers of sinusoidal vacuoles (Fig. 9). Gastric and intestinal submucosal and serosal vessels were congested. Some large vacuoles were observed in the submucosal veins. Intestinal and reproductive tract serosae had focal hemorrhages.

No fat emboli were detected in the vessels of the cerebral or spinal gray matter, free in the subarachnoidal hemorrhages, or within the choroid plexuses (Table 2). However, many fat emboli were observed within the veins and lymphatics of the epidural retia surrounding the spinal cord. Epidural adipocytes associated with hemorrhaging were enlarged or ruptured. Adipocytes

adjacent to the ophthalmic plexus, thyroid capsule, ovaries, and intestinal serosae were similarly affected.

Histologically, all lungs studied had fat emboli widely distributed within the small veins and capillaries (Figs. 10, 11). The fat emboli varied considerably in shape, with rounded and branching profiles. The size of fat emboli depended on the vessels in which they were located. Lymph nodes of the head and neck contained many fat emboli in the subcapsular areas sometimes in large numbers. Variably sized, fat stain–negative vacuoles, which were presumed to be air emboli, were observed in some lymph nodes, together with fat emboli. The kidneys had only a few fat emboli in small medullary veins. With the exception of one fat emboli in a cardiac arteriole (BW 10), fat emboli were observed only in veins.

For comparison, 86 archived samples of fresh lungs from different species of cetaceans that had been stranded on the Canary Islands were checked for fat emboli (data not shown). Only six showed intravascular fat emboli, and two of these were sperm whales that died after ship collision. The other four whales consisted of one stranded BW and an aged *Globicephala macrorrhychus*, for which the causes of death were not determined, and two pigmy sperm whales with skull fractures.

No bacterial pathogens were isolated on routine aerobic bacterial cultures of the brain, lung, and spleen.

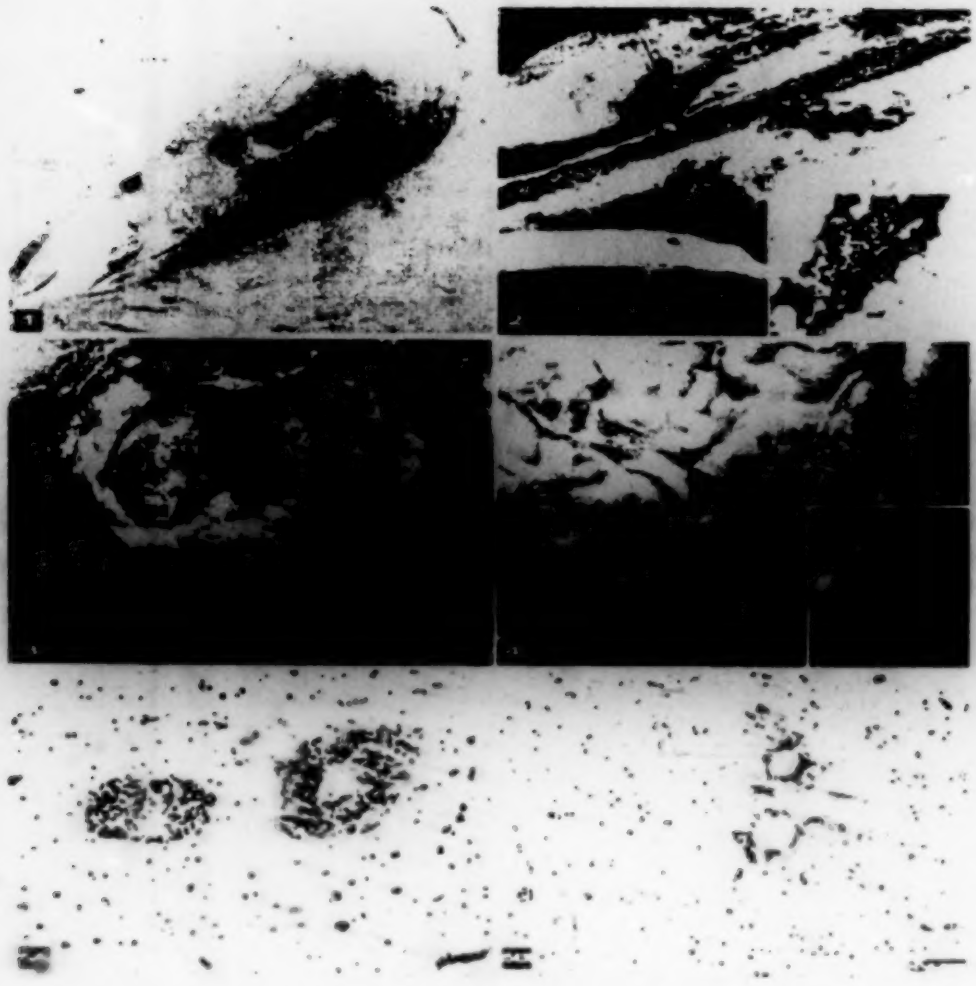


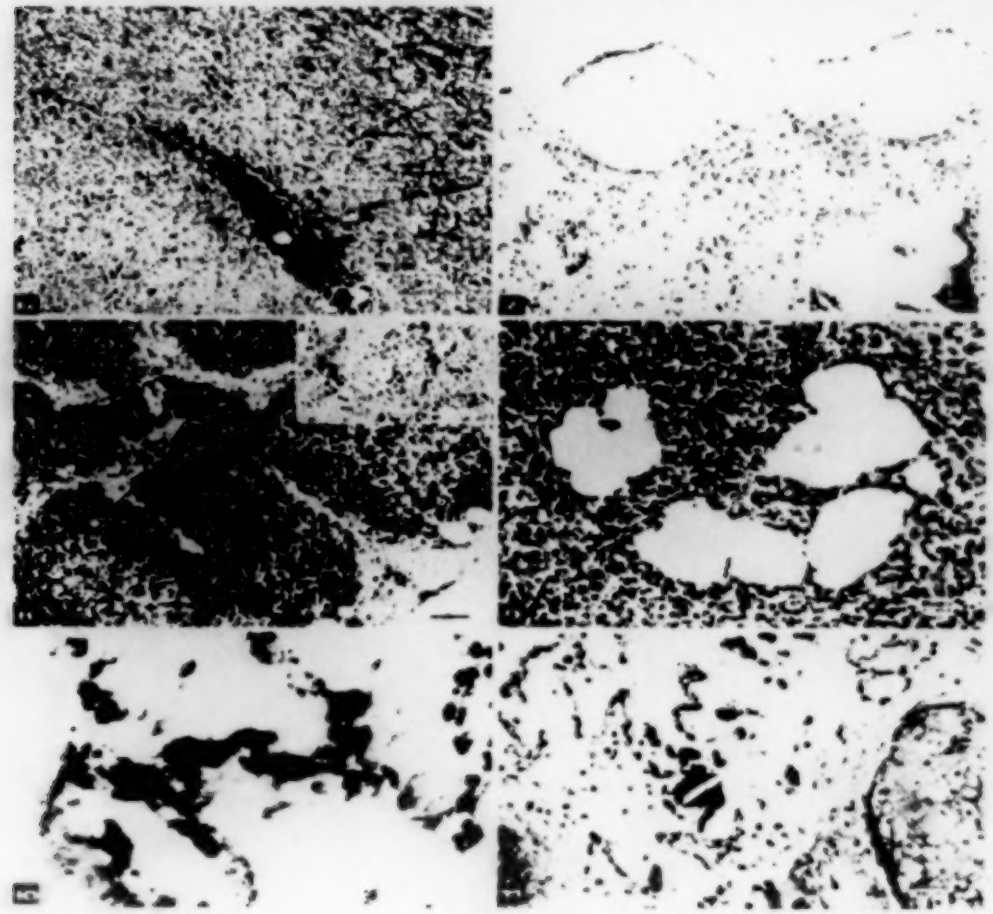
Fig. 1. A freshly stranded beaked whale (*Ziphius cavirostris*) without cutaneous lesions that would be an indication of collision trauma, terminal struggling, or predation.

Fig. 2. Mandible: beaked whale (BW-3). Areas of hemorrhage are in the acoustic fat of the jaw. Inset: Photomicrograph of perivascular hemorrhage in the acoustic fat with nonstaining, intravascular bubbles/emboli (arrow). HE. Bar = 25 μm.

Fig. 3. The exposed caudal aspect of the brain and spinal cord shows congestion of the meninges and severe congestion and hemorrhage in the epidural, vascular plexus around the spinal cord.

Fig. 4. Cerebral cortex; beaked whale (BW-2). The gyri of the cortex are swollen and have focal, subarachnoidal hemorrhaging. Inset: Intravascular gas bubbles (arrows) are prominent within a meningeal vessel.

Fig. 5. Brainstem; beaked whale (BW-1). **Fig. 5a.** Hemorrhage surrounds two vessels. Numerous capillaries are congested. HE. Bar = 25 μm. **Fig. 5b.** Erythrocytes within a hemorrhage are disrupted by discrete,



round, nonstaining air vacuoles. HE. Bar = 25 μm.

Fig. 6. Brain; beaked whale (BW-3). Congested vessels, some of which have perivascular hemorrhage, are associated with spongiotic parenchyma. HE. Bar = 25 μm.

Fig. 7. Kidney; beaked whale (BW-1). Subcapsular kidney veins are distended by round, fat-negative gas emboli. Bar = 25 μm. Inset: Renal interlobular connective tissue is disrupted by large, round-to-oval air emboli in veins associated with hemorrhage. HE. Osmium tetroxide-postfixation. Bar = 25 μm.

Fig. 8. Lymph node of the head; beaked whale (BW-1). Many erythrocytes are in the subcapsular and medullary sinuses. Subcapsular sinuses contain round-to-oval, fat stain–negative, unstained air bubbles (arrows). HE. Bar = 25 μm. Inset: Fat vacuole (arrow) staining in a lymph node sinusoid. HE. Osmium tetroxide postfixation. Bar = 25 μm.

Fig. 9. Liver; beaked whale (BW-1). Sinusoids are dilated by gas bubble–like dilatations. HE. Bar = 25 μm.

Fig. 10. Beaked whale (BW-7). Red-staining fat emboli are in vessels of the alveolar septa, and erythrocytes are in an adjacent alveolus. Phase-contrast miscroscopy. Oil red O Stain, phase-contrast photomicroscopy. Bar = 25 μm.

Fig. 11. Lung; beaked whale (BW-9). Dark-staining fat emboli are scattered within midsize veins and capillaries. HE. Osmium tetroxide-postfixation. Bar = 25 μm.

Discussion

Atypical mass strandings occurred previously off the same coasts of the Canary Islands during naval exercises carried out in 1985, 1988, and 1989,[61,67] but no postmortem studies were conducted. Similar strandings have been reported in the past two decades in Greece and in the Bahamas.[1,17] Some common epidemiologic factors are notable among these strandings: (1) the oceanographic features were characteristic of steep-slope regions; (2) the species involved were predominantly BWs; and (3) these events were temporally associated with naval maneuvers that employed high-intensity, low- or midfrequency range sonar signals.[11,17] These observations have been interpreted to suggest that BWs are found in association with particular oceanographic features and that they are either behaviorally or physiologically susceptible to the effects of sound exposure from certain types of anthropogenic sonar systems.

In the Greek stranding[17] and the stranding reported in this study, animals were in good body condition, without external lesions of collision trauma, and they had stomachs full of fresh ingesta. Conjunctival hemorrhages were common. In the Bahamas mass stranding of 2000, 3 of the 5 BWs were examined. These animals were in good body condition with food in their stomachs. The two freshest specimens had subcapsular renal hemorrhages, bilateral intracochlear hemorrhages, and unilateral temporal region and subarachnoid hemorrhages with blood clots observed bilaterally in the cerebral ventricles. It was concluded that these lesions were due to antemortem acoustic or pressure-related trauma caused by exposure to midfrequency sonar exposures.[11]

The gross and histopathologic evaluations reported in this study indicate that the whales had no systemic, inflammatory, infectious, or neoplastic diseases. All the animals had similar pathologic findings of generalized congestion and acute, disseminated hemorrhaging that mainly affected the CNS, acoustic jaw fat, pharyngeal and laryngeal serosae, lungs, and kidneys. Impact trauma was initially considered a possible cause; however, with the exception of one whale with postmortem shark bites (BW-9), external trauma was not noted.

The clinicopathologic findings most similar to those of the animals of our study are those reported in acute DCS in human divers,[16,20,30,46,47] animals experimentally exposed to compression and decompression,[18,37,38,59,63] or animals exposed to underwater explosions.[32,39,64] According to navy sources, no explosions occurred during the naval exercise; thus, another energy source is thought to be the primary trigger of the pathogenic process involved in this event.

Detection of antemortem gas bubble accumulation within blood vessels and tissues can be difficult to demonstrate after death, because gases can dissolve back into surrounding tissues when the inciting injury ceases.[31,48] Although many of the lesions noted in this study are those associated with the systemic gas bubble injuries that occur in acute cases of DCS in humans and laboratory animals,[3,16,18,26,33,36,37,46,58,59] a diagnosis of DCS through identification of intravascular bubbles is made with caution.

The pathogenesis of fat emboli formation is still not fully understood, and it is likely multifactorial.[24] Fat embolism is infrequently diagnosed, but it has been described in cases of acute and subacute DCS.[26,29,31] It may

arise from a number of different traumatic and nontraumatic processes.[24,43,49,62] Pulmonary and systemic fat emboli that develop within hours of trauma are typically considered a consequence of injury to fat depots.[24,62] Fat embolism also may occur by the coalescence of chylomicrons and intralipid liposomes in plasma during stress.[21] In both cases, intravascular lipid emboli can be demonstrated in several organs using histochemical methods on formalin-fixed tissues collected years earlier.[2,7,51] To our knowledge, this study provides the first description of fat emboli in cetaceans.[13,25]

Acute hemorrhaging in fat with necrosis of adipocytes, fat emboli in the lungs, epidural veins, and head and neck lymph nodes were identified in the freshest carcasses examined. These findings are similar to those observed with rapid fat emboli onset shortly after injury.[10,24,31,49] Embolus distribution suggests that injured adipose tissue is the primary source. The large number of fat droplets and erythrocytes within the draining lymph nodes of the head and neck indicates this area was primarily affected by the pathologic process. No fat emboli were found within the vessels of the CNS or associated with hemorrhages in the cerebral subarachnoid spaces. It is presumed that the large vascular plexuses (including epidural and thoracic retia mirabilia) could protect the CNS from accumulating gas and fat emboli.[41] This hypothesis is supported by the observation that in BWs, disrupted adipocytes were often observed in association with hemorrhages, and fat emboli were observed within the epidural veins around the cervical spinal cord. The disruption of interstitial fat depots adjacent to veins could result from nitrogen bubble formation and growth and from tissue rupture that introduces both fat and gas into the venous blood

stream, processes that are suspected of contributing to bubble formation in human DCS and in experimental animals after decompression.[18,26,29,30]

The low numbers of fat emboli found in the kidney were discovered in the medullary capillaries. Neither fat nor gas emboli were observed in glomeruli, implying that they were not circulating in the arterial blood delivered to the kidneys or that the renal circulation was shut down as in a dive mode.[21] Fat emboli were not associated with hemorrhages beneath the kidney capsule, where distended veins and disrupted capsular and interlobular connective tissue with large, nonfat-staining vacuoles (gas bubbles) were noted. It is speculated that the nitrogen bubble development observed in this study was merely nitrogen bubble escape from nitrogen-saturated tissues into free spaces and veins either by static or rectified diffusion.[6,23]

From the lack of published reports of stranded cetaceans (several hundreds of 15 different species) and on the basis of the experience of personnel in the Canary Islands and the UK (more than 2,000 cetaceans of several species), the incidence of fat emboli is presumed to be low in most of the species studied. A whale's agonal activity while stranded on the beach, a common scenario, does not commonly induce fat emboli. The distribution of fat emboli presented in this study, relative to other stranded cetaceans, and the conditions required for fat emboli development suggest that the generation of fat emboli in this study likely occurred before the animals became stranded. Further evidence that supports this conclusion is the observation that three whales with fat emboli were not stranded on the beach but were recovered offshore. Also, observations performed by the per-

sonnel present at the strandings indicated that animals were severely shocked and dying rapidly. The first dead animals were found 4 hours after the use of sonar began, so there was little time for the moribund whales to have developed the antemortem lesions while on the beach or rocks. These observations suggest the animals were severely injured before beaching and that gas and fat emboli were related to the injury and not secondary to the stranding event.

Although DCS is not always lethal, if severe, it can be rapidly fatal, or it can result in a more protracted syndrome leading to death.[16,29,31] Gas and fat emboli can cause nervous and cardiovascular dysfunctions, respiratory distress, pain, and disorientation. These signs common to human and experimental animal DCS[16,18,24,27,30,36] may have been the main pathophysiologic process leading to the death and/or stranding of these BWs.

The mechanism of development of emboli remains to be determined. Three pathways were previously proposed for the development of the lesions observed in BWs that became stranded in the Bahamas: resonance, tissue diathesis, and acoustically mediated bubble formation.[11,23,44] Resonance and tissue diathesis could account for hemorrhagic trauma and fat emboli evolution, but they do not explain the presence of gas emboli or the distribution of hemorrhage and fat emboli within multiple tissues and organs. Acoustically mediated bubble formation provides a possible explanation for the observed lesions.[6,14,23,25]

Bubbles may grow via rectified diffusion, which is the growth or generation of bubbles driven by exposure to an acoustic field.[6,23] Rectified diffusion includes the growth of bubbles through the diffusion of gas in the

absence of a continuous acoustic exposure. According to this theory, the acoustic source destabilizes existing bubble nuclei, which grow due to the outflow of gas from gas-saturated tissues.[6,23] Another proposed mechanism is that BWs are startled by an intense acoustic exposure and modify their surfacing behavior. In this way, supersaturation and the probability of bubble formation are increased due to changes from their normal dive profiles.[14,23,25,45]

Because nitrogen is more soluble in lipids than in other biologic tissue, there would be a propensity for bubble growth in lipid-rich tissue.[14,18,23,24,26,29,30,44] The postprandial and presumably hyperlipidemic state of these whales may have favored lipid aggregation in blood. A greater degree of supersaturation should decrease the threshold for these putative processes.

Dolphins and human divers are known to develop relatively high levels of nitrogen supersaturation resulting from cycles of compression and decompression during repetitive, breath-hold diving.[6,23,52,56] However, dolphins (and presumably other cetaceans) have evolved adaptations that mitigate the accumulation of excess nitrogen in tissues.[21,34,50,54,56,57] The most notable adaptation is lung or alveolar collapse, which stops gas exchange at the depth when alveoli collapse.[21,56,57] In the presence of an intense energy field, the degree of tissue saturation required for bubble formation may decrease.[6,23] It has been hypothesized that BWs should have a greater degree of tissue–nitrogen saturation than most cetaceans because of their slow and deep-diving behavior.[22,23,65]

Damage to the acoustic fat of the head may provide clues to understanding the etiology of the observed le-

sions. Sound impulses are thought to be directed to the ear via the specialized acoustic fat channels of the lower jaw.[21] Hemorrhages were observed in the fatty acoustic channels of the jaw of all atypically mass-stranded BWs. Strong acoustic signals will affect these well-vascularized lipid-rich channels and could result in rapid bubble activation. Such a situation could result in rapid bubble activation driven by both tissue nitrogen off-gassing and continued acoustic exposure.[6,23]

The development of gas bubbles within tissues could have produced hemorrhages and necrosis, acute spongiotic changes in the CNS, and gas/fat venous embolism. Some of these lesions occur during the initial phases of acute DCS and DON lesions in humans and experimental animals and in these mass-stranded BWs.[18,26,29,30,59,63]

Gas and fat emboli released into the venous system and deposited in the pulmonary capillary beds may travel through arteriovenous shunts into the systemic circulation.[16] Respiratory and cardiovascular dysfunctions may occur with a biphasic response at the brain-spinal cord level: an initial venous embolic obstruction and vasoconstriction, followed by a secondary vasodilatation and prolonged (reactive) hyperemia.[60] This hemodynamic process may explain the widespread cerebral congestion and edema with spongiosis, intracranial perivascular hemorrhages, and subarachnoid and intraventricular hemorrhages that have been described in the BW mass strandings.

Unfortunately, evaluation of portomesenteric vasculature was not performed; however, the gas bubbles observed in liver sinusoids are similar to those reported in portomesenteric vessels following decompression in humans[4,48] and in experimental DCS in dogs.[4] Subse-

quently, these acute lesions have been found by our group in two recently single-stranded BWs (*M. densirostris*) (unpublished observation) and have been observed in stranded cetaceans in the UK.[25]

Gas embolism in the inner ear has been described in DCS.[27,36] Emboli may induce otic hemorrhages and contribute to disorientation and/or vestibular dysfunction. Similar lesions have been described in other, sonar-associated mass strandings of whales.[11] Investigators should carefully dissect and sample ear structures to more completely document the potential contribution of fat and gas emboli in otic tissues to this stranding syndrome.

In summary, this study presents lesions in cetaceans that are similar to those of acute decompression-like disease in humans and laboratory animals. Evidence of gas bubbles, presumably nitrogen, is presented, and vascular and tissue changes consistent with those caused by gas bubble injuries and fat emboli were demonstrated in the vital organs of BWs from an atypical mass stranding. The stranding was temporally and spatially coincident with a naval exercise employing mid-frequency sonar. The animals were presumed to have died or to have been stranded with a DCS-like disease and died shortly after with severe cardiovascular failure brought on by "stranding stress syndrome."[9,11] Researchers aware of the syndrome of gas bubbles and fat emboli should be better prepared to document the lesions in the event of similar mass strandings.

Gas and fat emboli should be considered in stranded cetaceans suspected of having been exposed to sonar. Comparative data should be collected from unexposed controls to gather evidence about the conditions and mechanisms by which acoustic exposure induces lesions.

Further investigation of the behavioral[19,25,65] and physiologic effects of sonar on cetaceans is important to elucidating the pathogenesis of this syndrome.

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THE FIRST MASS STRANDING THAT WAS ASSOCIATED WITH THE USE OF ACTIVE SONAR (KYPARISSIAKOS GULF, GREECE, 1996)

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INTRODUCTION The Greek Seas occupy the northern part of the eastern Mediterranean and are characterised by a very long, highly irregular coastline and a rich geomorphology (Stergiou *et al.*, 1997). The depressions and the deep trenches that surround Greece (Fig. 1) create appropriate habitats for deep diving cetaceans close to the coasts.

The Cuvier's beaked whale *Ziphius cavirostris* is the only ziphiid regularly present in the Mediterranean Sea (Notarbartolo di Sciara, 2002). Both strandings and sightings recorded during the last decade have shown clearly that the Greek Seas are an important area for this species (Frantzis *et al.*, in press). The yearly average of Cuvier's beaked whale strandings in Greece is 5.6 individuals (95% C.L. = 2.78) for the decade 1990-99 (the mass stranding of May 1996 excluded). Although underestimated (because no official stranding network was established in Greece before 1992), this number is significantly higher than the respective average for each of the three northern countries of the west and central Mediterranean (Spain 1.9, France 0.2, Italy 2.6), and higher (although not significantly) than their sum. Most of the strandings that occurred in Greece were recorded along the Hellenic Trench, which runs all around the west and south Greece, and marks the limits of the Eu-

ropean continental shelf with steep underwater relief. Surveys conducted along the Hellenic Trench confirmed that Cuvier's beaked whales are abundant (Frantzis *et al.*, in press).

The mass stranding of Cuvier's beaked whales presented in this work was the first to be associated with the use of active sonar. It took place in Kyparissiakos Gulf (Frantzis, 1998), which is also part of the Hellenic Trench. It is a long sandy beach in the west coast of the Peloponnese (Fig. 1). Mass strandings involving beaked whales had repeatedly coincided with the proximity of military manoeuvres in the recent past in the Canary Islands (Vonk and Martin, 1989; Simmonds and Lopez-Jurado, 1991); however, no data regarding the nature of the military activity and the possible use of active sonar that was taking place are available.

THE MASS STRANDING During the first hours of the morning of 12 May 1996, Cuvier's beaked whales started to strand alive in many different locations of Kyparissiakos Gulf. The strandings went on until the afternoon of 13 May. A few more specimens (4-5) were reported as stranded and rescued, entangled and rescued, or swimming very close to the coasts during the next three days. However, only one of those reports could be confirmed. Twelve whales have been recorded in total on the 12th and 13th May. Those whales were spread along 38.2 km of coast and were separated by a mean distance of 3.5 km (SD = 2.8, n = 11) (Fig. 1).

[Diagram Omitted]

Another whale stranded on 16 May and was driven back to the open sea. Two weeks later, one more animal was found decomposing on a remote beach of the neigh-

bouring Zakynthos Island, 57 km away from the closest stranding on the mainland. We had the opportunity to observe, measure, and sample 11 whales. Nine of them were immature males with no erupted teeth and two were females (Fig. 1). The recorded spread of the stranded animals in location and time was atypical, as whales usually mass-strand at the same place and at the same time. The term "atypical mass stranding" has been proposed for the recorded strandings as opposed to typical mass strandings known mainly from pilot whales and false killer whales (Geraci and Lounsbury, 1993).

Necropsies of eight stranded animals were carried out, but no apparent abnormalities or wounds were found. These necropsies were limited to basic external examination and sampling of stomach contents, blood, and skin. No ears were collected; no entire organs or histological samples were conserved because of many problems related to permits, lack of facilities and means, and lack of relevant knowledge and trained specialists. A recent re-examination of old photos of the mass stranding showed that the eyes of (at least) four individuals were bleeding. These animals had been photographed soon after their death. Stomach contents had variable quantities of squid remains (like beaks and ocular lenses) from three different squid species. Many of them contained cephalopod flesh, indicating that recent feeding had taken place.

The following year (October 1997), several strange strandings of Cuvier's beaked whales were recorded in the Ionian Sea, once more spread along several kilometres of coast. The northern stranding position was

slightly north of Lefkada Island (some 80 nautical miles north of Kyparissiakos Gulf) and the southern was in south Zakynthos Island (Fig. 2). At least nine Cuvier's beaked whales stranded within a period of about ten days. Two more whales were reported to accompany one of the stranded animals. However, no photographic documents exist to confirm these reports. At least one of the stranded animals was alive when stranded on the 1st October. According to the state of decomposition of the whales that were found dead, the strandings should have started by the last days of September 1997. Once more there was military activity in the area. Unfortunately, no precise data regarding this activity have become available until today. This is the reason why this second atypical mass stranding of Cuvier's beaked whales in the Greek Ionian Sea has remained largely unreported.

THE CAUSE All available information regarding the conditions associated with the mass stranding of May 1996 was gathered, and many potential causes were listed and examined. The most important of them were: major pollution events, important tectonic activity, unusual geochemical/physical/meteorological events, magnetic anomalies in the area, epizootics, and conventional military exercises. However, none of the potential causes listed above coincided in time with the mass stranding or could explain its characteristics (see also NATO-Saclantcen, 1998, which came to the same conclusion). Several months after the mass stranding, I found a warning to mariners issued by the Greek Hydrographic Service, which provided significant information relevant to its cause. This warning (586 of 1996) was stating that 'sound-detecting system trials' were being

performed by the NATO research vessel *Alliance* from 24:00 on 11 May to 24:00 on 15 May - a period that encompassed the mass stranding. The officially declared area where the sea trials had been carried out enclosed all the co-ordinates of the stranding points. The tests performed were for Low Frequency Active Sonar (LFAS), a system that introduces very high levels of low and medium frequency sound into the marine environment to detect quiet diesel and nuclear submarines. Detailed information regarding the time schedule, the runs (Fig. 3), and the specific sound characteristics of the transmissions became unclassified and available through NATO-Saclantcent by the fall of 1998 (NATO-Saclantcen, 1998). The Alliance was using high power active sonar, transmitting simultaneously to both low (450-700 Hz) and medium (2.8-3.3 kHz) frequencies, at a maximum output of 228 dB re 1 μPa @ 1 m, which enables long detection ranges.

[Diagrams Omitted]

DISCUSSION Research on LFAS began by NATO in 1981 (NATO-Saclantcen, 1993), and a statement on its environmental impact was formally initiated in July 1996 by the US Navy. The adverse effects of low and mid-frequency sound on whales had been poorly studied (Richardson and Würsig, 1997) by the time the mass stranding occurred in Kyparissiakos Gulf. However, many specialists had warned that at high levels, as occurs with LFAS, they could be dramatic (see relevant discussions on LFAS in MARMAM list in 1996). Like all ziphiids, the Cuvier's beaked whale is a deep-diving, pelagic cetacean that rarely mass-strands (Heyning, 1989). Only seven strandings of more than four individuals had been recorded from 1963 to 1996 worldwide -

the individuals on these occasions numbering 5, 6, 6, 10, 12, 15 and 19 (Frantzis, 1998). On most of these clearly extremely rare occasions, mass strandings showed atypical characteristics unlike those that occur with other whales. This suggests that the cause should have a large synchronous spatial extent and a sudden onset. Such characteristics are shown by sound in the ocean. Cetaceans, and particularly the deep-diving whales, were known to be especially affected by low and mid-frequency anthropogenic sound, even at quite low received levels (Watkins *et al.*, 1985; Finley *et al.*, 1990; Finley and Greene, 1993; Bowles *et al.*, 1994; Richardson and Würsig, 1997), and it is worth noting that the first atypical mass stranding of ziphiids was recorded in 1963 (Tortonese, 1963), i.e. at the time that the use of a new generation of powerful mid-frequency tactical sonars became widely deployed (Balcomb and Claridge, 2001). In addition, the proximity of military manoeuvres had already been suspected of causing three previous atypical mass strandings of Cuvier's beaked whales, spread over wide areas of the Canary Islands (Vonk and Martin, 1989; Simmonds and Lopez-Jurado, 1991).

Although the available data in 1996 could not directly prove that the use of active sonars caused the mass stranding in Kyparissiakos Gulf, all evidence clearly pointed to the LFAS tests. The main arguments and the supporting evidence are listed below:

- At least 12 of the 14 animals stranded alive in a completely atypical way.
- The robust condition of the stranded animals plus the stomach content analyses were not consistent

with pathogenic causes (which anyway are not known to provoke atypical mass strandings).

- No unusual environmental events occurred before or during the stranding (e.g. tectonic activity, magnetic anomalies, geophysical or geochemical events, meteorological events etc.).
- The stranding characteristics suggested a cause with large synchronous spatial extent and sudden onset (i.e. those shown by sound in the ocean).
- Loud, low and mid-frequency sound was already known to have an impact upon deep-diving cetaceans.
- And most importantly, the probability for the two events (i.e. the LFAS tests and the mass starnding [*sic*]) to coincide in time and location, while being independent, was extremely low. In other words if we consider the 16.5-year period before the mass stranding (1981 was chosen arbitrarily because this was the year that NATO started to experiment on LFAS, and we are sure that no mass stranding, nor other tests of LFAS had occurred in the area since that year), the probability of a mass stranding occurring for other reasons during the period of the LFAS tests (i.e. from the 12th to the 15th of May 1996 instead of any other day) is less than 0.07%

Today, after the repeated mass strandings that followed the Greek case with identical characteristics and always in close association with naval exercises and use of military active sonar in the Bahamas (Balcomb and Claridge, 2001), Madeira, and Canary Islands (see this

volume), there is little doubt in the scientific community regarding the cause of the mass stranding in Kyparissiakos Gulf. If the precautionary principle had been applied shortly after the analysis of the data related to the Greek case, and active sonar tests had been stopped, the most recent mass strandings would have been avoided.

The Cuvier's beaked whale stranding history of Kyparissiakos Gulf (Fig. 4) shows that although no mass strandings had been recorded before 12 May 1996, the strandings of this species were not rare. The average stranding rate was 0.88 individual/half year (SD = 0.99, n = 8). After the mass stranding of May 1996, the stranding rate was reduced to less than one-third of what it was before the mass stranding (0.25 individual/half year, SD = 0.45, n = 12). This is an alarming result, which is in accordance with what has been observed in the Bahamas after the multi-species mass stranding of March 2000: previously photo-identified and re-sighted beaked whales were not sighted again after the mass stranding (Balcomb and Claridge, 2001). These results indicate that the damage could be significantly higher than the death of the stranded whales. Many others may have left the area or may have died in the deep offshore waters.

[Diagram Omitted]

The present workshop, as well as the exponentially increasing number of studies regarding beaked whales indicate that there is a high level of interest in the scientific community regarding the serious problem of the use of high power active sonars in the oceans, and a lot of effort is dedicated in finding solutions. The recognition of the problem, which is now unanimous, is an im-

portant first step. The various interesting theories regarding the mechanisms through which sound sends the animals ashore are also very useful in an effort to mitigate the problems. However this significant progress is not able to stop further loss of cetaceans and cetacean habitats, if not accompanied by the proper decisions. The scientific community does not need to witness further mass strandings linked to naval exercises in order to advance its knowledge. There are enough data to show that the most reasonable decision is to stop all dangerous, powerful sonar activities in the ocean. Cetologists prefer to have the opportunity to observe and study the beaked whales and all other cetacean species alive and free ranging in their habitats rather than lying dead on a beach.

ACKNOWLEDGEMENTS I would like to acknowledge the support of Vodafone Group Foundation to the scientific activities of the Pelagos Cetacean Research Institute in 2003, including its participation in the 17th ECS Conference. I wish to thank the Commander RADM A. Maratos and the personnel of the Hellenic Hydrographic Service for their collaboration; D. Cebrian and A. Natoli for their help in the field. Special thanks go to H. Whitehead, J. Potter and J. Goold, for their precious advice and comments before the final acceptance of the relevant paper that was published in Nature.

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IMPACTS OF ANTHROPOGENIC SOUND

John Hildebrand

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INCIDENTS OF MASS STRANDINGS ASSOCIATED WITH HIGH INTENSITY SOUND

Bahamas, 15-16 March 2000

Sixteen cetaceans were found stranded along the Providence Channel in the Bahama Islands during a 2-day period in March 2000, and the episode was correlated with a U.S. Navy training exercise using ASW sonar (Evans and England 2001). The stranded animals were predominantly beaked whales (seven *Ziphius cavirostris*, three *Mesoplodon densirostris*, and two ziphiid sp.), although two minke whales were among the animals that live-stranded. One Atlantic spotted dolphin (*Stenella frontalis*) stranded at a somewhat distant location and is thought to have died of unrelated causes. Eight of the beaked whales died and the remaining animals were refloated, their fates remaining unknown (Balcomb and Claridge 2001). Tissue samples were collected from five of the dead beaked whales. Gross necropsy results suggested that all five were in good body condition; none showed evidence of debilitating disease. Hemorrhages were found in the acoustic fats of the head, the inner ears, and spaces around the brain, with no evidence of external blunt-force trauma. The pattern of injury in the freshest specimens suggested that the ears were structurally intact and that the animals were alive at the time of injury (Ketten et al. 2004).

Five Navy ships were operating hull-mounted ASW sonars in the area, four of which were described in a preliminary report (Evans and England 2001). Of the four ships described, two operated SQS-53C hull-mounted sonars and two used SQS-56 hull-mounted sonars (Watts 2003). The former were operated at 2.6 and 3.3 kHz with a source level of 235 dB re 1 μPa at 1 m or higher and ping lengths of 0.5-2 s alternating between tones and FM sweeps. The latter were operated at 6.8, 7.5, and 8.2 kHz at 223 dB re 1 μPa at 1 m. Integrated sound exposures of 160-165 dB re 1 μPa for 50-150 s would have been experienced in near-surface waters (15 m depth) throughout much of the Providence Channel on 15 March 2000 (Evans and England 2001). Peak sound pressure levels above 185 dB re 1 μPa would have been experienced only within a few hundred meters of the ship tracklines along the central portion of the channel.

The association in space and time between the stranding locations and acoustic source tracks shown in Figure 7.3 is compelling evidence that these animals were affected by the high-intensity sound sources (Evans and England 2001). A few hours before midnight on 15 March, two source ships (designated B and C) entered the Providence Channel off the southwest end of Abaco Island and moved through the channel toward the west. Both ships were using active sonar as they entered the channel (ship B 53C sonar, and ship C 56 sonar) with pulse repetition rates of about 24 s. The second pair of source ships (A with 53C sonar, and D with 56 sonar) entered the channel at about 0400 h on 15 March, again from the east and moving west.

[Diagram Omitted]

A cluster of strandings occurred at the south end of Abaco Island during the morning of 15 March, with the first recorded stranding at 0730 h. These strandings appear to have occurred at the same time or soon after the second pair of source ships passed through the channel south of Abaco, and about 8 h after the first pair of source ships passed this point in the channel. These standings occurred at minimum ranges of 10-30 nmi from the ships' closest points of approach. During the late morning, the source ships moved northwestward, approaching Grand Bahama Island, and a cluster of noon and afternoon strandings occurred on the south coast of Grand Bahama Island, again with minimum source-to-shore ranges of 20-30 nmi. Balcomb and Claridge (2001) noted that individual Cuvier's beaked whales that had been identified photographically in this region previously have not been sighted subsequent to the stranding event, suggesting that the beaked whale mortality was higher than simply the number of whales that were known to have mass stranded.

The highest sound exposures would have been experienced by animals distributed at locations along the source tracks, suggesting that following exposure they might have swum toward the stranding sites 10-30 nmi distant. However, data on beaked whale distribution (K. Balcomb and D. Claridge pers. comm.) suggest that *Mesoplodon densirostris* is found predominantly along the margins of the channel, in waters about 500 m deep, and that *Z. cavirostris* is also found along the channel margins, but in deeper waters. Combining the source modeling and the animal distribution data suggests that sound at moderate exposure levels (e.g., 150-160 dB re 1 μPa for 50-150 s) would have been received at the most

likely locations of beaked whales in Providence Channel (Evans and England 2001).

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[Nature, Vol. 525, 9 October 2003]

GAS-BUBBLE LESIONS IN STRANDED CETACEANS

Was sonar responsible for a spate of whale deaths after an Atlantic military exercise?

There are spatial and temporal links between some mass strandings of cetaceans—predominantly beaked whales—and the deployment of military sonar[1-3]. Here we present evidence of acute and chronic tissue damage in stranded cetaceans that results from the formation *in vivo* of gas bubbles, challenging the view that these mammals do not suffer decompression sickness. The incidence of such cases during a naval sonar exercise indicates that acoustic factors could be important in the aetiology of bubble-related disease and may call for further environmental regulation of such activity.

Fourteen beaked whales were stranded in the Canary Islands close to the site of an international naval exercise (Neo Tapon, 2002) held on 24 September 2002. Strandings began about 4 hours after the onset of mid-frequency sonar activity. We necropsied eight Cuvier's beaked whales (*Ziphius cavirostris*), a Blainville's beaked whale (*Mesoplodon densirostris*) and a Gervais' beaked whale (*Mesoplodon europaeus*), six of which were very fresh. These animals showed severe, diffuse vascular congestion and marked, disseminated microvascular haemorrhages associated with widespread fat emboli within vital organs. Intravascular bubbles were present in several organs, although definitive evidence of gas embolism *in vivo* is difficult to determine after

death[4]. No pathogenic bacteria were isolated from the carcasses.

These lesions are consistent with acute trauma due to *in vivo* bubble formation resulting from rapid decompression (as occurs in decompression sickness)[4,5]. Bubble formation in response to sonar exposure might result from behavioural changes to normal dive profiles (such as accelerated ascent rate), causing excessive nitrogen supersaturation in the tissues (as occurs in decompression sickness); alternatively, bubble formation might result from a physical effect of sonar on *in vivo* bubble precursors (gas nuclei) in nitrogen-supersaturated tissues[6,7].

The beaked whales found in the Canary Islands are not the only stranded cetaceans to provide evidence of bubble-associated tissue injury. In strandings that occurred in Britain between October 1992 and January 2003, three out of 24 Risso's dolphins (*Grampus griseus*), three out of 342 common dolphins (*Delphinus delphis*) and one out of 1,035 harbour porpoises (*Phocoena phocoena*) necropsied, as well as the only Blainville's beaked whale studied, contained gas bubbles in their blood vessels and gas-filled cavities in their parenchymous organs.

The livers of these animals were the most consistently affected organ,with macroscopic gas-filled cavities (diameter, 0.2-6.0 cm) occupying 5-90% of the volume (Fig. 1) and having variable degrees of fibrotic encapsulation. Intrahepatic spherical non-staining cavities (gas bubbles) of diameter 50-750 μm were associated with compression of hepatic tissue, distension of portal blood vessels, and sometimes with haemorrhage, acute hepato-

cellular necrosis or fibrosis, indicating that this damage was inflicted before death. One of the *D. delphis* specimens also had bilateral acute renal infarcts associated with gas bubbles.

The cavitary lesions described here are new to marine-mammal pathology. Their presence in fresh carcasses in the absence of bacterial isolates, and the apparent progression through the stages of pericavitary fibrosis, are inconsistent with decompositional bubbles from bacterial activity. The coexistence of ante mortem gas bubbles and gas-filled fibrosed cavities suggests that *in vivo* bubble formation and expansion is the proximate aetiology of this disease process. Bubble formation may either have initiated in the liver and kidneys ('autochthonous' bubble formation) or in other tissues (fatty tissue, for example) before haematogenous transfer to the liver and kidneys as gas emboli.

Nitrogen bubbles and emboli can develop in decompression sickness in humans and experimental animals as a result of expansion of pre-existing gas nuclei within nitrogen-supersaturated tissues[5]. Anatomical, physiological and behavioural adaptations may mitigate against *in vivo* formation of nitrogen bubbles in marine mammals[8-12], although there is empirical evidence of nitrogen supersaturation in cetaceans[8]. Some deep-diving species are predicted to undergo up to 300% nitrogen tissue supersaturation[7]. Static diffusion in nitrogen-supersaturated tissues is therefore a plausible mechanism for bubble development and is consistent with a greater prevalence of cases in deep-diving species such as Risso's dolphins and beaked whales.

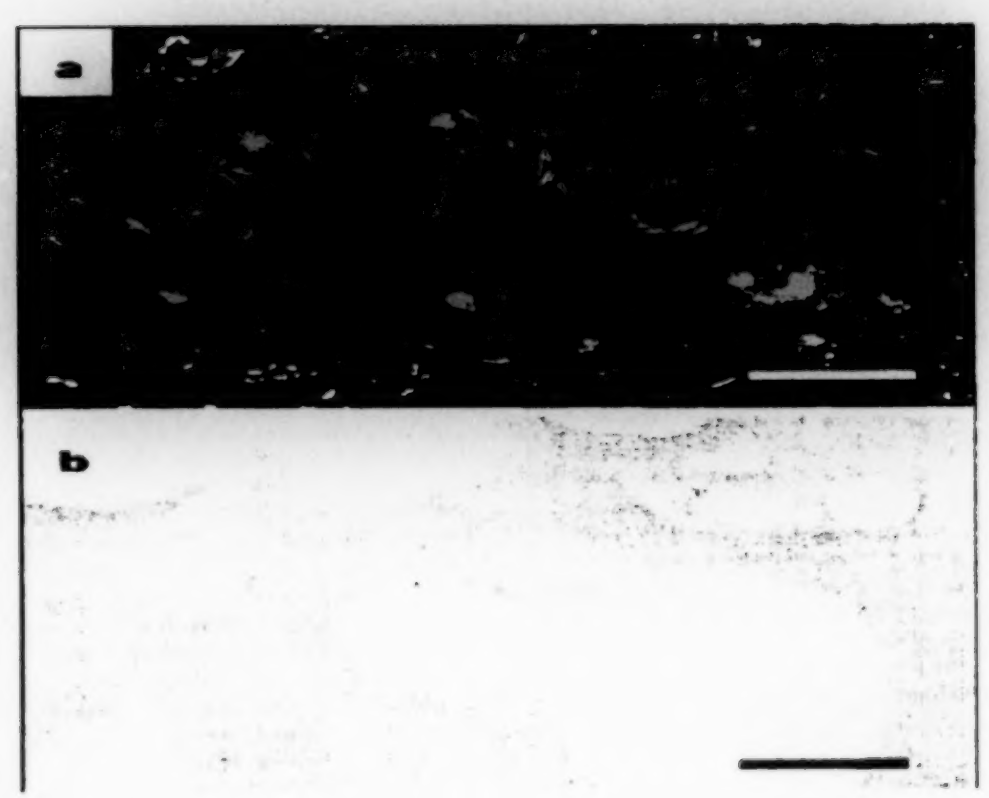

Figure 1 Gas-filled cavities in the liver of a stranded common dolphin (*Delphinus delphis*). **a**, Cut surface of the liver, showing that cavitary lesions have extensively replaced the normal tissue. Scale bar, 10 mm. **b**, Photomicrograph of liver section, showing multiple cavities (gas bubbles) within the portal tracts and hepatic parenchyma. Scale bar, 750 μm.

Further investigation is needed into the physical and behavioural effects on cetaceans exposed to sonar, and the relation of these effects to bubble growth *in vivo* and to strandings. Necropsies should aim to compare fat and gas emboli in stranded cetaceans suspected of having been exposed to sonar with results from unexposed stranded controls. In a wider conservation sense, our

findings need to be taken into account in considering the regulation and limitation of the adverse impact of anthropogenic sonar on cetaceans.

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HERRING (SILD), KILLER WHALES (SPEKKHOGGER) AND SONAR - THE 3S-2006 CRUISE REPORT WITH PRELIMINARY RESULTS

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30 April 2007

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6.2 Sonar exposure experiments on killer whales

Though we faced many challenges, we were able to DTAG killer whales and conduct CEEs. The data obtained are of high quality, though we had hoped to collect more total data. The research staff and tools available were very suitable for the planned research, including vessel support, acoustic listening system Delphinus, visual search teams, DTAGs and tagging teams.

behaviour observation teams, and the acoustic source Socrates. All of the research tools available contributed usefully as planned, except the Nøkken which was unable to move widely enough to support search and tracking efforts as planned.

Whale numbers were substantially lower during 3S-2006 than during the pilot-study period in 2005. On days when we did find whales, there were fewer groups available for research than during the pilot study in 2005, and the weather was worse because we were working further out in the Vestfjorden system. Nonetheless, we were able to tag 6 killer whales in 5 different groups with DTAGs. These tags collected a total of 17 hours and 46 min of data while deployed. The DTAG data have been inspected, both sensors and acoustics, and are of high quality. We conducted 1 sonar exposure experiment on 1 tagged animal using the LFAS-signal, 1 sonar exposure experiment on 2 animals using the MFAS-signal and 1 control experiment on 1 animal. This was less than our goal, though we made intensive efforts during the cruise to improve our methodology.

We assessed possible reactions of killer whales on two different scales. The broader scale linked the presence or absence of whales in eastern Vestfjorden depending on sonar activity. Such activity could have been generated either by the Socrates source under our control, or by the frigate KNM Narvik participating in the FLOTEX exercise, having a hull mounted sonar transmitting in the 5-8 kHz frequency band. The finer scale was reactions of tagged killer whales to an approaching sonar during controlled exposure experiments. While our analyses are still ongoing, some preliminary results are provided below.

6.2.1. Broad scale reaction to sonar signals

Relating to sonar use by ourselves, on 4 occasions, whales were found the following day near the location of a herring sonar exposure trial (for 2 trials whales were not seen the day before or after). On 1 occasion, whales were not found the day following a night time trial, but the whales observed the day before were moving away to the west, and bad weather made it impossible to search westwards. Thus, night time use of the Socrates source for herring experiments did not appear to strongly displace killer whales from the Eastern Vestfjorden area. In contrast, whale numbers apparently declined in Vestfjorden, with none seen for 3 days, following the start of the FLOTEX naval exercise, during which active sonars were used.

6.2.2. Fine scale reaction to sonar signals

During the LFAS CEE (1-2 kHz sweep), the tagged whale continued travelling in its group and did not appear to avoid the source (fig. 6.4). During the MFAS CEE (6-7 kHz sweep), two whales were tagged. The tagged whales along with other whales that had been carousel-feeding together, ceased feeding during the approach of the sonar and moved rapidly away to the South and West (fig. 6.5). The depth records from this experiment also indicate that the avoidance response seen is also associated with an intermittent change in diving behaviour (fig. 6.6).

The sonar arrivals were recorded by the DTAGs with high fidelity, and analysis of the received levels is clearly feasible. Though our analyses of the received sonar signals are still in progress, initial analyses indi-

cate that during both CEEs, the tags recorded maximum single-ping received levels near 150 dB re 1μPa.

[Figures Omitted]

More data are required to describe how killer whales might behaviourally respond to sonar, but our preliminary results suggest that killer whales might be particulary sensitive to sonar signal in the MFAS frequency band. This preliminary conclusion is supported by the finding that whales were not found in the eastern Vestfjorden basin following the start of the FLOTEX exercise, and the apparently strong reaction to the MFAS CEE. In contrast, any reaction to the LFAS CEE appeared negligible.

6.2.3. Planned analysis and future data collection

1. Systematically measure received sound-exposure levels during CEEs.
2. Calibrate DTAG sensor data and link sensor data to acoustic time series.
3. Compare behavior during CEEs to baseline data set.
4. Conduct additional CEEs with killer whales
5. Retrospective analysis of whale presence in relation to military exercises

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Active Sonar Waveform

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1 EXECUTIVE SUMMARY

JASON was tasked by the ONR to investigate the reported incidents of marine mammal beachings in

apparent response to mid-frequency (2-6 kHz) active sonar. To this end, we received several briefings organized by Bob Gisiner of the ONR'S [*sic*] marine mammal program. We also arranged on our own to hear from several other scientists regarding specific aspects of this issue; these aspects included the population biology of beaked whales (including possible genetic methods to investigate this biology), beaked whale physiology, current sonar system limitations, and possible interpretations of the available pathology data from the beachings. We would like to state at the outset that the evidence of sonar causation is, in our opinion, completely convincing and that therefore there is a serious issue of how best to avoid/minimize future beaching events.

Although the original hope was that our study could identify a relatively simple modification of the sonar waveforms in current use that would mitigate this problem, we concluded that the current state of knowledge was insufficient to support such a hoped-for "quick fix". Instead, we reviewed all the evidence with an eye towards deciding upon possible scenarios underlying the beachings; we thereafter used these scenarios to suggest needed research emphases and also short-term mitigation strategies. The specific possibilities investigated are:

a. Beaked whales were close enough to the sonars, possibly because of their deep-diving lifestyle as adapted to local bathymetry, to have suffered "expected" damage, based on damage thresholds established for other marine organisms.

b. Beaked whales have specialized anatomy, possibly due to their deep diving, which render them especially sensitive to acoustic waves.

c. Beaked whales are especially skittish, and the loud, reverberant acoustic fields caused uncontrolled attempts to escape.

Our sense is that the strongest case can, at the moment, be made for scenario c., but that this may change as more research is done on this problem.

For each scenario, one can identify key scientific areas of uncertainty and hence decide upon the most relevant research tasks. For example, the currently favored scenario necessitates direct behavioral studies of beaked whales as well as populations studies so as to identify regions where peacetime operations should be curtailed. Also, various theories as to the source of the hemorrhaging seen in the pathology studies need to be tested. On the other hand, investigating sonar waveform changes are probably not a priority. This list would change if we adopt another scenario and in fact, we propose investigating all of these possibilities in parallel. A discussion of what the resultant approach program looks like is given in the report.

In addition, various mitigation strategies can be adopted even in the absence of a complete understanding. For example, it is clear in retrospect that operating in a narrow straight (and in fact up the slope in the strait), thereby leaving limited "escape" paths for marine mammals, is not a safe choice. Similarly, one can imagine the development of whale-detecting sonar waveforms and "whale-herding" techniques which could reduce the probability of induced beaching. A list of these is given in the report.

Finally, some of us felt that as serious as these beachings are, they do not represent a global problem

for marine mammals. There are other aspects of human activity, namely the production of increasing levels of low frequency ocean noise via shipping and oil exploration, which may have a much wider impact and hence deserve ONR attention. In this regard, we include an addendum on how one might be able to achieve reasonable levels of quieting for large merchant ships.

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3 RECENT BEACHING EVENTS

* * * * *

We need not repeat here all the details of these events; they are covered quite adequately in the Bahamas beaching event interim report [4] and the local government website [5] devoted to the Canary Island incident. It is worth nothing that the culprit appears to be mid-frequency (kHz Range) operational sonar systems, not the LFA system (- hundred of HZ), the very low frequency systems used for ATOC research (tens of HZ) or the extremely localized high frequency devices (20 kHZ). This is not surprising given estimates for the range of frequencies that are effectively detected by the beaked whale auditory system (see Figure 3). Given the variety of different beaching events, it is hard to argue that there is some very special confluence of acoustic events that uniquely trigger beaked whale beaching; instead the trauma, whatever its cause, seems to be a robust consequence of mid-frequency ensonification.

[Chart Omitted]

* * * * *

KEY AREAS FOR BEAKED WHALES WORLDWIDE

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ABSTRACT

Beaked whales represent one of the groups of large mammals about which relatively little is still known. Many beaked whale species are known of from less than 50 records and one is known only from three partial skeletons. Beaked whales are subject to bycatch by fisheries, ingestion of plastics, accumulation of biocontaminants and adverse effects from anthropogenic noise. However, the inadequacy of knowledge about their biology means that developing effective conservation strategies can be difficult. We suggest that beaked whale conservation can best be achieved if, in consort with other approaches, key areas for beaked whales around the world can be identified. We suggest five criteria that can be used to identify key areas for beaked whales where, if human impacts were to occur, they would cause conservation concerns for beaked whales at a regional or global level. Using these criteria, 23 beaked whale key areas have been identified, based on existing knowledge contained in a database created from published and unpublished beaked whale records. In total, these 23 key areas covered the locations of almost 70% of all the beaked whale records in the database. However, for the identification of key areas to provide a useful tool for beaked whale conservation it is important not only that they are identified but that appropriate assessment and

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mitigation strategies are implemented within them to ensure that beaked whales are not adversely affected by human activities.

KEYWORDS: CONSERVATION; DISTRIBUTION; MONITORING; ATLANTIC OCEAN; BEAKED WHALES; HABITAT; GEOGRAPHY

INTRODUCTION

Less is known about many extant beaked whale species than about some mammals that became extinct thousands of years ago (e.g. mammoths) and most of what is currently known about the 21 species recognised [*sic*] by the International Whaling Commission (IWC) has been gleaned from beached animals, sometimes discovered far from the deep-water habitats in which they lived (Heyning, 1989; Mead, 1989a, MacLeod, 2000). Although beaked whales occur in all major seas and both hemispheres, some species are known from fewer than 50 published records worldwide (see MacLeod *et al.*, 2006). One species, the spade-toothed whale (*Mesoplodon traversii*) is known from only three partial skeletons (van Helden *et al.*, 2002) and several others have yet to be seen alive (Dalebout *et al.*, 2002). Directed studies of live animals are few (MacLeod, 2000) although that number has grown in recent years (e.g. Claridge and Balcomb, 1995; Whitehead *et al.*, 1997b; MacLeod and Claridge, 1999; Williams *et al.*, 1999; MacLeod and Zuur, 2005).

The lack of knowledge about beaked whales is primarily due to their oceanic distribution and their preferences for deep waters beyond the shelf edges where relatively few research vessels venture (MacLeod, 2000). However, there are also problems in identifying animals to species level at sea and even stranded animals can be

mis-identified (Dalebout *et al.*, 1998; 2002; 2003; Barlow *et al.*, 2006). Beaked whales can be affected by human activities and known or suspected mortalities occur as a result of whaling, bycatch in fisheries for other marine species, ingestion of plastics, accumulation of biocontaminants and anthropogenic noise (e.g. Mitchell, 1997; Knap and Jickells, 1983; Simmonds and Lopez-Juardo, 1991; Law *et al.*, 1997; Frantzis, 1998; Poncelet *et al.*, 2000; Balcomb and Claridge, 2001; Waring *et al.*, 2002, Cox *et al.*, 2006).

The premise of this paper is that beaked whale conservation can best be achieved in the short-term if the traditional approaches for conserving large mammals (such as calculating and monitoring populations sizes, investigating habitat requirements, monitoring habitat loss, fragmentability and connectivity, increasing community awareness, identifying potential threats and implementing appropriate mitigation measures) are focussed [*sic*] on identified areas of regional or global importance for beaked whales. Such 'key' areas are identified using relatively simple criteria and available knowledge. The list and the criteria can be revised in the future to take these advances in knowledge into account.

Despite this approach, it is important to stress that, particularly given current knowledge, it should not be taken to mean that beaked whales do not occur outside these areas. All beaked whales may be affected by anthropogenic activities and appropriate mitigation measures must be taken both within and outside key areas.

IDENTIFICATION OF KEY AREAS FOR BEAKED WHALES

Central to the identification of 'key' areas is a clear definition of what comprises a key area and how it is identi-

fied. In this paper, a key area is defined as any area where, if anthropogenic impacts were to occur, they might give rise to conservation concerns at a regional or global level. Four criteria are used to identify such key areas:

(A) areas where one or more beaked whale species have been regularly recorded at sea;

(B) areas used during movements between two or more key areas identified in criterion (A);

(C) areas with a high diversity of beaked whales where 'high' means records of more than 25% of all beaked whale species and at least 50% of all beaked whale genera;

(D) relatively small areas that cover a large portion, or all, of the known range of a species or isolated population.

A fifth criterion (E), that can be used in additional support in the context of the above four, is for areas where beaked whales have already been affected by human impacts and where conservation concerns may exist or where they may be more vulnerable to future anthropogenic interference.

* * * * *

PROPOSED KEY AREAS FOR BEAKED WHALES

Twenty-three areas were identified from the collected data and a review of published literature (Table 1; Fig. 2). In the summaries below, the limits were set based on the available data, details of which are provided afterwards. The number of records refers to the number for each key area which are currently held in

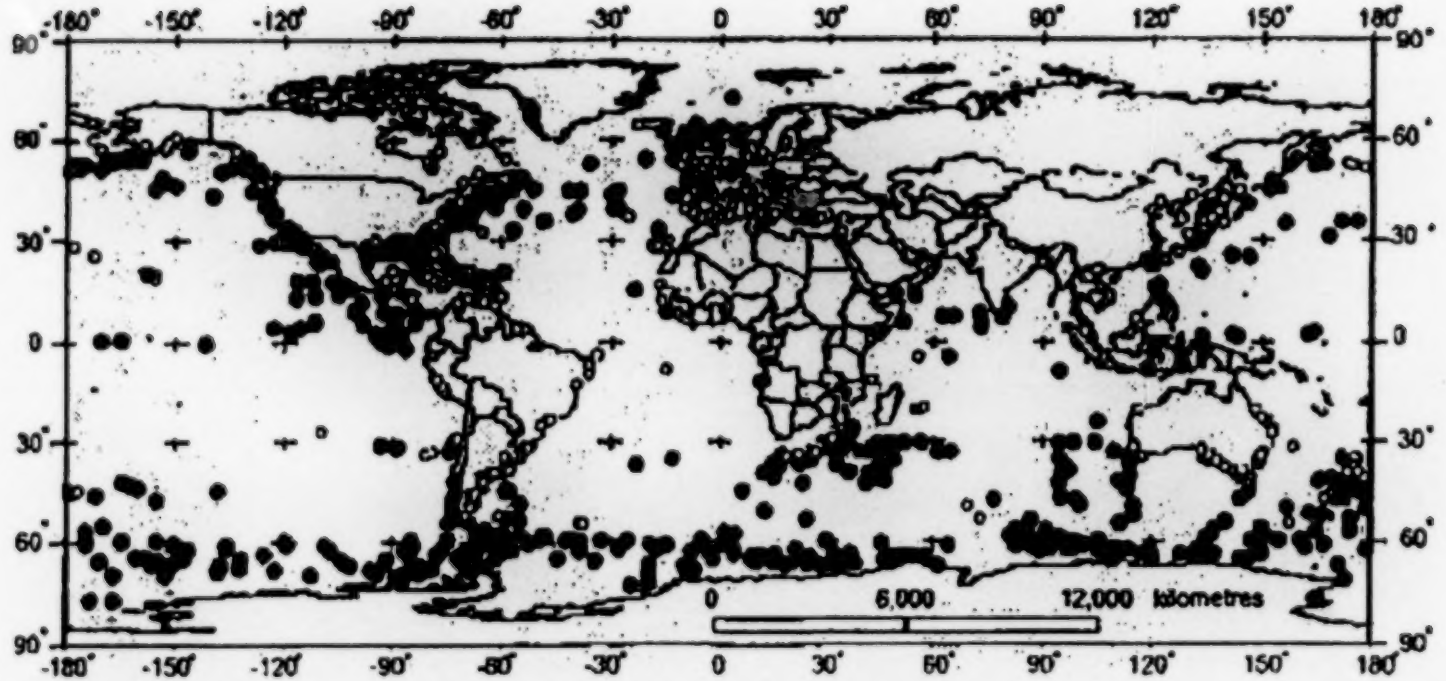

Fig. 1. Distribution of 4,857 records of beaked whale occurrence included in the global database of beaked whale records, which was used to identify beaked whale key areas. White – Strandings records; Black – Sightings records; Grey – Other records.

the beaked whale database, rather than the total of all records in the key area. Where additional information also has been used, the appropriate references are provided.

* * * * *

13. Californian Shelf Margins

Limits: From the Californian coast, west to 125.0°W (based on 70 records and Dohl *et al.*, 1983; Hill and Barlow, 1992; Carretta and Forney, 1993; Forney, 1994; Barlow and Gerrodette, 1996; Carretta *et al.*, 2000; 2002).

Perrin's beaked whale (*M. perrini*), one of the least known species of beaked whale is currently only known from Californian waters. It was first described in 2002 and is only known of from a total of five stranded animals and one possible sighting at sea ranging from 32.9°-36.6°N (Dalebout *et al.*, 2002). The known range is thus restricted to a small area off the Californian coast. Six other species of beaked whales have been recorded in Californian waters (Table 2). Several of these species, including Baird's beaked whales, Blainville's beaked whales, *Mesoplodon* species and Cuvier's beaked whales have been observed repeatedly in Californian waters, particularly in the southern California Bight. The latter species is probably the most numerous, with an estimated population of over 4,000 (Carretta *et al.*, 2000; 2002).

The California shelf margins therefore qualify as a key area under criteria (A), (C) and (D).

* * * * *

Table 1

Known key areas for beaked whales identified using the five criteria outlined in this study; (•) means criterion is probably met.

Known beaked whale key areas	Criteria A	B	C	D	E	Specific areas known to be of importance in key area (criteria)	References
1. Atlantic Frontier	•	(•)				Northern end of the Rockall Trough (particularly around the eastern end of the Wyville-Thompson Ridge, approximately 59.4°N, 007.5°W (A), and the Faeroes-Shetland Channel, centred at approximately 61.3°N, 003.0°W (A, B).	Pollock *et al.* (2000); West (2000); MacLeod *et al.* (2004a).
2. Bay of Biscay	•		•			Southern Bay of Biscay around Cap Breton Canyon and along continental shelf edge (A)	Barristy (1962); Castells and Mayo (1992); Mead *et al.* (1988); Gannier *et al.* (2000); Pascalet *et al.* (2000); Williams *et al.* (1999); A. Williaret (Biscay Dolphin Research Project) (pers. comm.); D. Walker (Organisation Cetacea) (pers. comm.).
3. Genoa Canyon	•						Azzellino *et al.* (2001).
4. Eastern Alboran Sea	•	(•)		(•)		Triangle between 36.34°N, 003.00°W, 36.51°N 002.52°W and 36.26°N, 002.79°W (A).	Sagarminaga and Cabeddu (2001)
5. Western Greece	•				•	Ionian Sea (A) Kyperissiakos Gulf (E).	Polia *et al.* (1992); Polio *et al.* (1994); Pulcini and Angradi (1994); Frantzis (1998)
6. Azores	•		•			Around the island of Pico (A)	Richard (1936); Breyss (1968); Clarke (1981); Reiner *et al.* (1993); Steiner *et al.* (1998); Leal *et al.* (2001).
7. Canaries	•		•		•	South of La Gomera (A), south-west of Tenerife 28.3°N, 16.9°W; 28.1°N, 16.8°W (A), Fuerteventura and Lanzarote (E)	Mead *et al.* (1988), Vonk and Martin (1988, 1989); Martin *et al.* (1990); Simmonds and Lopez-Jurado (1991); Montero and Martin (1992); Polio *et al.* (1992); Carrillo and Lopez-Jurado (1998); Carrillo and Martin (1999); Ritter and Brederlau (1999); Evans *et al.* (2001); Vidal Martin (pers. comm.).
8. The Gully, Nova Scotia	•			•		43.5-44.5°N, 058.5-060.0°W (C, D)	Whitehead *et al.* (1997a); Gowans *et al.* (2000); Dalebout *et al.* (2001); Hooker *et al.* (2002a); Hooker *et al.* (2002b).
9. North-eastern North America continental shelf margin	•		•		•		Ulmer (1941); Backus and Schevill (1961); Mitchell and Kozicki (1975); Leatherwood *et al.* (1976); CETAP (1982); Barre and Zollo (1990); Mead *et al.* (1988); Mead (1989a); Lien and Barry (1990); Waring *et al.* (1993); Nawojchik (1994); Tove (1995); Waring *et al.* (2001); Waring *et al.* (2002).
10. Northern Bahamas	•				•	Little Abaco Canyon, centred at approximately 26.6°N, 076.9°W (A), southern edge of Little Bahama Bank from 26.6°N 078.5°W to 25.9°N 077.3°W (E).	Claridge and Balcomb (1995); Balcomb and Claridge (2001); Evans *et al.* (2001); MacLeod *et al.* (2004b); MacLeod and Zuur (in press).
11. Northern Gulf of Mexico continental shelf margin	•					25.9-27.6°N and 96.0-90.8°W (A), or area bordered by the following co-ordinates: 26.6°N, 90.0°W, 27.0°N, 90.4°W, 27.7°N, 90.6°W, 28.0°N, 90.6°W, 29.2°N, 87.4°W 28.9°N, 87.1°W, 27.7°N, 88.0°W (A).	Jefferson and Shiro (1997), NOAA CD-ROM NOLIC-72.
12. Puerto Rico and the Virgin Islands	•						Varona (1964); Varona (1970); Erdman *et al.* (1973); Varona (1985); Mattila and Clapham (1989); Mignucci-Giannoni (1989); Mignucci-Giannoni (1996); Mignucci-Giannoni (1998); Rosario-Delestre *et al.* (1999); Rodrio and Mullin (2000); Swartz and Burks (2000); Swartz *et al.* (2001).
13. Californian shelf margin, USA	•		•	•		Waters 32.9-36.6°N (D)	Hubbs (1946); Houck (1958); Rossi (1964); Mitchell (1968); Sullivan and Houck (1979); Dohl *et al.* (1981, 1983); Mead *et al.* (1988); Hill and Barlow (1992); Lynn and Reiss (1992); Carretta and Forney (1993); Forney (1994); Barlow and Gerrodette (1996); Carretta *et al.* (2000, 2001); Dalebout *et al.* (2002).
14. Hawaii	•						Shallenberger (1981); Mobley *et al.* (2000); Baird (pers. comm.).
15. Eastern Tropical Pacific	•		•	•		From the central and northern South American coast west to approximately 135.0°W (A, C). From the South American coast westward around 30°S (A).	Vidal *et al.* (1993); Dawson *et al.* (1998); Perrin *et al.* (1999), Palacios and Lynn (2001); H. Whitehead (Dalhousie University) (pers. comm.).
16. Galapagos	•					1.6°N-1.3°S, 92.6-89.9°W.	Robinson *et al.* (1981); Palacios (1996), Perrin *et al.* (1999), Daniel Palacios, unpublished data); H. Whitehead (Dalhousie University) (pers. comm.)
17. Falkland Is./Tierra del Fuego	•		•				Goodall (1978); White *et al.* (2001)
18. Indian Ocean around South Africa	•		•	(•)			Talbot (1960); Ross (1969); Gambell *et al.* (1975); Hemato *et al.* (1988); Ross (1984); Findlay *et al.* (1992).
19. Japan	•	•	•			34.0-36.0° N, 139.0-141.0°E (designated Area I); 37.0-38.0°N, 141.0-144.0°E (designated Area II); off the coast of Hokkaido, particularly around 44.0°N, 145.5°E. Areas I (particularly in an area centred in approximately 34.5°N, 139.5°E) II and VII	Omura *et al.* (1955); Nishiwaki and Oguro (1971); Nishiwaki and Oguro (1972); Nishiwaki and Kamiya (1958); Nishiwaki *et al.* (1972); Miyashita (1986), Miyazaki *et al.* (1987); Kasuya and Miyashita (1997), Marine Mammal Stranding Database (National Museum of Science, Tokyo, Japan).
20. Southwestern Australia	•						Gales *et al.* (2002); IWC (unpublished data)
21. Tasmania and southeastern Australia			•	•			Hale (1931); Gudet (1966), Gudet (1967); Arthur (1971); McCann (1975); Gaskin and Cassella (1976); Dixon (1980); Lewis (1988); Mead (1989a); Dixon and Frigo (1995)
22. New Zealand	•		•	(•)		To the east and south of South Island (A)	Oliver (1937); Gaskin (1971); McCann (1975); Gaskin and Cassella (1976); Findlyer *et al.* (1979); Mead and Baker (1987); Mead (1989a, b); Baker and van Helden (1999); Baker (2001); van Helden *et al.* (2002); IWC (unpublished data)
23. Southern Ocean and Antarctic waters	•					Antarctic Peninsula from 65.2°S, 065.7°W-70.3°N, 094.6°W (A)	Gaskin and Cassella (1976); Miyazaki and Kato (1983); Kasamatsu *et al.* (1993); Bowles *et al.* (1994); Pitman *et al.* (1995); Hobson and Martin (1996); Pitman *et al.* (1997); Purpoint *et al.* (1997); Leaper and Scheidat (1998); Branch and Butterworth (2001).

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MASS STRANDINGS OF BEAKED WHALES IN THE CANARY ISLANDS

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INTRODUCTION Members of the family Ziphiidae are amongst the least known of marine mammals due to their oceanic habits and cryptic behaviour. In addition, the available data suggests that their populations are not abundant. Most of the information regarding their natural history comes from the study of a low number of stranded specimens. Mass strandings of the family are rare (Erdman, 1962; Erdman *et al.*, 1973; Galbreath,. 1963; Martin *et al.*, 1990a, b; Rosario-Delestre *et al.*, 1998; Van Bree and Kristensen, 1974; Viale, 1975), and over recent years they have called the attention of conservationists and researchers due to their possible connection with Naval exercises (Frantzis, 1998; Simmonds & Lopez-Jurado, 1991).

On the morning of the 24th September 2002, a mass stranding of beaked whales occurred on the islands of Fuerteventura and Lanzarote, Canary Islands (Spain), whilst some naval exercises NEOTAPON 2002 were being held in nearby waters. Due to circumstances, the number of animals involved, and the special difficulties, various people and institutions set in motion a plan to try and rescue the greatest possible number of animals. Right from the beginning the priorities were:

1. Help to refloat live animals.
2. Locate and preserve dead animals on the coast.
3. Carry out necropsies to determine the causes of death and gather biological information.

The current document presents the circumstances and the preliminary results of this stranding, the species and number of animals involved, the acquisition of biological data and other relevant aspects. Likewise, it makes a synthesis of similar events occurred in the Archipelago over recent years.

DESCRIPTION OF THE EVENT OF THE 24TH SEPTEMBER 2002

On the 24th September, at least 14 cetaceans stranded on the islands of Fuerteventura and Lanzarote. The special development of the event, and the number and species involved were as follows: five animals were found dead on the coast (four in Fuerteventura and one in Lanzarote), three were found alive and subsequently died, from which one was taken by the sea. Finally, six specimens were returned to the sea (including one Gervais' beaked whale *M. europaeus*) and another was seen near the coast by an emergency helicopter. Finally, on the 25th September, two Cuvier's beaked whales *Z. cavirostris* appeared (one in Fuerteventura and another one in Lanzarote), and on the 26th September, two other specimens of the same species (one in Fuerteventura and another in Lanzarote). An undetermined decomposed specimen was seen floating in the north of Fuerteventura, but it could not be recovered. It is likely that the animals seen on subsequent days were those that were returned to the sea on the 24th September. From the specimens that were refloated on the 24th,

there was an adult male Cuvier's beaked whale and a Gervais' beaked whale. Between the 24th and 27th September, a total of eleven dead specimens were recovered and studied belonging to three species: Cuvier's beaked whale (n=9), Blainville's beaked whale (n=1), and Gervais' beaked whale (n=1).

In connection with the circumstances, all the animals appeared at late dawn. Those that were alive were disoriented, making them easy to handle them on the coast. In fact, the lesions that they possessed consisted of scratches and in no case had they broken jaws or damage to their faces, which is common in other types of strandings, despite finding some of the specimens on the rocks. The specimen of Gervais' beaked whale did not strand and was found dead floating a few metres away from the coast.

Specimens from the 24th September underwent a necropsy by members of the Veterinary University of Las Palmas, Gran Canaria (pathological information) as well as by the Society for the Study of Cetaceans of the Canaries Archipelago (biological information). The same happened with specimens from subsequent days which, based on their autolytic status, must have died on the 24th September. The complete stomachs of the six animals of the 24th September 2002 were collected and frozen for subsequent analysis. The stomach of the remaining specimens was collected *in situ*, and its contents were fixed with 70% alcohol. Except for one animal, whales had a stomach content which was fresh to moderately digested, indicating that they had recently been eating. One of the specimens was thin, with a high number of stomach nematodes. Another one had a piece of cloth of 80 x 100 cm. All specimens of Cuvier's beaked

whale had the nematode *Crassicauda sp* in their kidneys, although this can be considered normal for the species. To date, *Crassicauda sp* shows a prevalence of 100% in the Cuvier's beaked whales stranded in the Canaries.

An adult male Cuvier's beaked whale which appeared on the morning of the 25th September in the island of Lanzarote, was partially eaten by a shark, especially the jaws and melon, in addition to the tail stock. The head is a rare location for bites from predators in the dead bodies of floating cetaceans, specially in specimens which are so fresh, and therefore it is likely that the presence of haemorrhages in the oral cavity and /or blowhole had resulted in this. It is interesting that in the event of 1985 (see below), the live cetaceans were followed by sharks to shore.

Other cases that have occurred in the Canary Islands

Eight previous cases of beaked whale strandings in the Canary Islands are known to share similarities with this one; at least six coincide in time with naval exercises, one has some indications, and for the remaining cases, no information has been found. Of these, five were mass strandings, two involved two animals and one a single individual. From the mass strandings, four were multi-specific, involving two to three species. In one of the multi-species events there was a couple of pygmy sperm whales (*Kogia breviceps*). In all cases we had difficulties in knowing the number and composition of the stranded animals due to a combination of circumstances and therefore the animals specified below are not the ones which stranded but those which could be studied. A decisive factor was that the animals re-

mained stranded in coves and inhabited coast stretches that had to be surveyed, others were returned to the sea and subsequently appeared in other areas of the coast which caused great confusion. The cases which occurred in the Canaries were the following:

1. 8th February 1985. Mass stranding of 10-12 animals along the south-east coast of Fuerteventura. Species involved: Cuvier's beaked whale and Gervais' beaked whale. Coincides with naval exercises.

2. 1st June 1986. Stranding of five animals on the north-east coast of Lanzarote. It was possible to study only two specimens. Species involved: three Cuvier's beaked whale, one Gervais' beaked whale, and one undetermined.

3. 4th July 1987. Stranding of three Gervais' beaked whale on the north-east coast of Lanzarote.

4. November 1987. Two Cuvier's beaked whales stranded on the north-east coast of Lanzarote.

5. 25th and 26th November 1988. Stranding of three Cuvier's beaked whales and one northern bottlenose whale *Hyperoodon ampullatus* on the south-east coast of the island of Fuerteventura. At the same time, two pygmy sperm whales appeared on the north-east coast of Lanzarote. Coincides with naval exercises "FLOTA 88".

6. 19th October 1989. Three Gervais' beaked whales, two Blainville's beaked whales and at least 15 specimens of Cuvier's beaked whale stranded on the east coast of Fuerteventura. The specimens were found

in an advanced state of decomposition. This stranding coincided with naval exercises CANAREX 89.

7. 11th December 1991. Two Cuvier's beaked whales stranded in Tazacorte, La Palma, following the sinking of the boat "Churruca" during the development of naval exercises "SINKES 91" in the area.

8. 5th June 1991. The dead floating body of one Cuvier's beaked whale was found off Santa Cruz de La Palma, island of La Palma (28°40'60" N; 17°45'90" W). Coincides with naval exercises "OCEAN SAFARI 91".

CONCLUSIONS The overall analysis of the event of the 24th September 2002 and of other similar strandings which have occurred in the islands share various common elements. There is a clear coincidence in time and space between naval exercises carried out in the Canary Archipelago over recent decades and mass strandings of members from the family Ziphiidae.

Except for one case, the common species is Cuvier's beaked whale *Z. cavirostris*, which is in agreement with other similar events occurring in other regions. Within each species, a strong segregation is seen according to sex and size. For example, most of the Cuvier's beaked whales that stranded on the 24th September 2002 were sub-adults. In none of the cases described above was the presence of calves or dependent animals detected. In all cases, the majority of the animals stranded during dawn and early morning. Except for three individuals, the animals had exceptionally fresh stomach contents, with remains from cephalopods and crustaceans which were virtually intact, together with partially digested remains, which shows that they had been recently feeding.

The fact that it simultaneously affected various species with different habits and use of habitat within the family Ziphiidae, seems to suggest that the factor responsible is connected with a characteristic which is shared by all the members of the family.

The spatial development of the strandings suggests that the event affects all the species and/or animals within a specific area, and probably there is a relationship between the density of specimens in the area and the number of stranded animals. In this sense, it is interesting to highlight that those events with higher numbers of stranded animals took place in the autumn, the time of the year when most strandings of Cuvier's beaked whales are detected in the Canary Islands (V. Martín, unpublished data). Possible interactions between naval exercises and strandings may be missed in cases of individual strandings, such as in the case of La Palma. For this reason, we are currently reevaluating the strandings of these species over recent years in the Canaries as well as their circumstances.

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NOAA Technical Memorandum NMFS

[Seal omitted] JANUARY 2007

U.S. PACIFIC MARINE MAMMAL STOCK ASSESSMENTS: 2006

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CUVIER'S BEAKED WHALE (*Ziphius cavirostris*): California/Oregon/Washington Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE

Cuvier's beaked whales are distributed widely throughout deep waters of all oceans (Heyning 1989). Off the U.S. west coast, this species is the most commonly encountered beaked whale (Figure 1). No seasonal changes in distribution are apparent from stranding records, and morphological evidence is consistent with the existence of a single eastern North Pacific population from Alaska to Baja California, Mexico (Mitchell 1968). However, there are currently no international agreements for cooperative management of this species. For the Marine Mammal Protection Act (MMPA) stock assessment reports, Cuvier's beaked whales within the Pacific U.S. Exclusive Economic Zone are divided into three discrete, non-contiguous areas: 1) waters off California, Oregon and Washington (this report), 2) Alaskan waters, and 3) Hawaiian waters.

[Figure 1 Omitted]

POPULATION SIZE

Although Cuvier's beaked whales have been sighted along the U.S. west coast on several line transect surveys utilizing both aerial and shipboard platforms, sight-

ings have been too rare to produce reliable population estimates. Previous abundance estimates have been imprecise and biased downward by an unknown amount because of the large proportion of time this species spends submerged, and because the ship surveys on which they were based covered only California waters, and thus could not observe animals off Oregon/Washington. Furthermore, there were a large number of unidentified beaked whale sightings, which were probably either *Mesoplodon* sp. or Cuvier's beaked whales (*Ziphius cavirostris*). Updated analyses are based on 1) combining data from two surveys conducted within 300 nmi of the coasts of California, Oregon and Washington in 1996 (Barlow 1997) and 2001 (Barlow 2003), 2) whenever possible, assigning unidentified beaked whale sightings to *Mesoplodon* spp. or *Ziphius cavirostris* based on written descriptions, size estimates, and 'most probable identifications' made by the observers at the time of the sightings, and 3) estimating a correction factor for animals missed because they are submerged, based on dive-interval data collected for Cuvier's beaked whales in 1993-95 (an estimated 13% of all groups are estimated to be seen). Because animals probably spend time outside the U.S. Exclusive Economic Zone, a multi-year average abundance estimate is the most appropriate for management within U.S. waters. The 1996-2001 weighted average abundance estimate for California, Oregon and Washington waters based on the above analyses is 1,884 (CV = 0.68) Cuvier's beaked whales.

Minimum Population Estimate

Based on the above abundance estimate and CV, the minimum population estimate (defined as the log-normal 20th percentile of the abundance estimate) for Cuvier's

beaked whales in California, Oregon, and Washington is 1,121 animals.

Current Population Trend

Due to the rarity of sightings of this species on surveys along the U.S. West coast, no information exists regarding trends in abundance of this population.

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HUMAN-CAUSED MORTALITY AND SERIOUS INJURY

Fishery Information

A summary of recent fishery mortality and injury for Cuvier's beaked whales in this region is shown in Table 1. More detailed information on these fisheries is provided in Appendix 1. Mortality estimates for the California drift gillnet fishery are included for the five most recent years of monitoring, 1997-2001 (Cameron and Forney 1999, 2000; Carretta 2001, 2002). After the 1997 implementation of a Take Reduction Plan, which included skipper education workshops and required the use of pingers and minimum 6-fathom extenders, overall cetacean entanglement rates in the drift gillnet fishery dropped considerably (Barlow and Cameron 2003). However, because of interannual variability in entanglement rates and the relative rarity of Cuvier's beaked whale entanglements, additional years of data will be required to fully evaluate the effectiveness of pingers for reducing mortality of this particular species. Mean annual takes in Table 1 are based only on 1997-2001 data. This results in an average estimated annual mortality of zero Cuvier's beaked whales. There have been no Cuvier's beaked whales observed entangled in the drift gillnet fishery since 1995. Prior to the most recent 5-year period, there were a total of 21 Cuvier's beaked

whales entangled in the drift gillnet fishery: 1992 (six animals), 1993 (three), 1994 (six) and 1995 (six).

Table 1. Summary of available information on the incidental mortality and injury of Cuvier's beaked whales (California/Oregon/Washington Stock) in commercial fisheries that might take this species. Mean annual takes are based on 1997-2001 data unless noted otherwise.

[Table 1 Omitted]

Drift gillnet fisheries for swordfish and sharks exist along the entire Pacific coast of Baja California, Mexico and may take animals from this population. Quantitative data are available only for the Mexican swordfish drift gillnet fishery, which uses vessels, gear, and operational procedures similar to those in the U.S. drift gillnet fishery, although nets may be up to 4.5 km long (Holts and Sosa-Nishizaki 1998). The fleet increased from two vessels in 1986 to 31 vessels in 1993 (Holts and Sosa-Nishizaki 1998). The total number of sets in this fishery in 1992 can be estimated from data provided by these authors to be approximately 2700, with an observed rate of marine mammal bycatch of 0.13 animals per set (10 marine mammals in 77 observed sets; Sosa-Nishizaki et al. 1993). This overall mortality rate is similar to that observed in California driftnet fisheries during 1990-95 (0.14 marine mammals per set; Julian and Beeson, 1998), but species-specific information is not available for the Mexican fisheries. Previous efforts to convert the Mexican swordfish driftnet fishery to a longline fishery have resulted in a mixed-fishery, with 20 vessels alternately using longlines or driftnets, 23 using driftnets only, 22 using longlines only, and seven with unknown gear type (Berdegué 2002).

Other mortality

Additional, unknown levels of injuries and mortalities of Cuvier's beaked whales may occur as a result of anthropogenic noise, such as military sonars (U.S. Dept. of Commerce and Secretary of the Navy 2001) or other commercial and scientific activities involving the use of air guns. Such injuries or mortalities would rarely be documented, due to the remote nature of many of these activities and the low probability that an injured or dead beaked whale would strand.

STATUS OF STOCK

The status of Cuvier's beaked whales in California, Oregon, and Washington waters relative to OSP is not known, and there are insufficient data to evaluate trends in abundance. No habitat issues are known to be of concern for this species, but in recent years questions have been raised regarding potential effects of human-made sounds on deep-diving cetacean species, such as Cuvier's beaked whales (Richardson et al. 1995). In particular, active sonar has ben implicated in the mass stranding of beaked whales in the Mediterranean Sea (Frantzis 1998) and more recently in the Caribbean (U.S. Dept. of Commerce and Secretary of the Navy 2001). They are not listed as "threatened" or "endangered" under the Endangered Species Act nor as "depleted" under the MMPA. The average annual human-caused mortality in 1997-2001 is zero. Because recent mortality is zero, Cuvier's beaked whales are not classified as a "strategic" stock under the MMPA, and the total fishery mortality and serious injury for this stock can be considered to be insignificant and approaching zero.

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12.2.5 Anthropogenic noise

12.2.5.1 MINI SYMPOSIUM

Last year, the Committee noted the emergent threat of anthropogenic sound on cetaceans and other elements of marine ecosystems and also the potential for the Committee to assist in the development and interpretation of studies aimed at elucidating the potential impacts of anthropogenic noise on cetaceans. Several scientists with expertise in the fields of acoustics or marine mammal acoustics gave presentations. Clark chaired the mini-symposium as part of the SWG's sessions. Details are given in Annex K (item 6).

Presentations were given on the following topics: (a) the effects of anthropogenic noise on marine animals and the possible synergistic effects between ambient ocean noise levels and other environmental stressors; (b) physical acoustics and ambient noise in the ocean; (c) audition and the physiology of hearing in cetaceans and the effects of intense sounds on cetacean hearing; and (d) whale communication behaviour.

Potential impacts, including chronic and acute exposures, are increasing as a result of increased use of powerful sound sources (e.g. seismic airgun arrays, military sonars) and increasing levels of ambient noise from vessels (e.g. commercial shipping, fishing, recreational traffic). In some cases, sound sources radiate low-frequency sound over very large areas thereby exposing populations to low sound levels (< 120 dB re 1 μPa) over rela-

tively long periods of time (chronic). In other cases, sound sources radiate mid- to high-frequency sound over relatively small areas and individual animals are exposed to high levels of sound (> 160 dB re 1 μPa) over relatively short periods of time (acute).

During the mini-symposium, examples and evidence were presented to illustrate that impacts from anthropogenic sound sources can operate over spatial and temporal scales that differ by several orders of magnitude. Two examples are: (a) low-frequency (< 1000 Hz) ambient noise levels that have increased in the northern hemisphere by two orders of magnitude over the last 60 years (3dB/decade) thereby reducing the potential for long-range communication in mysticetes; and (b) sound exposures from mid-frequency sonars that coincide with mass strandings of beaked whales since sonar introductions in the 1960's. In addition, SC/56/E37 reviewed all 111 records of Cuvier's beaked whale strandings around Japan from the late 1980s to May 2004. During this period there were ten mass strandings consisting of 47 whales, plus an additional mass stranding of Baird's beaked whales. All these mass strandings occurred inshore from where the US Navy conducts testing activities off Japan, and where Cuvier's beaked whales were hunted historically. Therefore mid-frequency sonars were implicated as the probable cause for these 11 mass strandings (see Annex K, table 1).

The Committee received two papers demonstrating impacts from seismic airgun surveys on mysticetes, including western gray whale displacement from its critical feeding habitat off Sakhalin Island, Russia (SC/56/BRG39) and humpback whale mortalities in a breeding habitat of humpbacks off Brazil (SC/56/E28). The Com-

mittee **commends** the Brazilian Government for working to protect critical marine mammal habitats from noise exposure; in one unique case and opportunity, it has undertaken ongoing consultation to define the Abrolhos Banks as a critical habitat for marine mammals. The Committee views with great **concern** the impacts on large whales in critical habitats from exposures to seismic sounds impulses, particularly with respect to severely threatened populations such as the western gray whale.

In conclusion, the Committee **agrees** that there is now compelling evidence implicating military sonar as a direct impact on beaked whales in particular. The Committee also **agrees** that evidence of increased sounds from other sources, including ships and seismic activities, were cause for serious concern. The potential for cumulative or synergistic effects of sounds, as found in other taxa, with non-acoustic anthropogenic stressor was noted.

Whilst noting that there is considerably more scientific work needed, the Committee emphasizes that measures to protect species and habitats cannot always wait for scientific certainty, as encoded in the precautionary principle. This is especially true for cases involving the exclusion of an endangered population from its habitat.

As a result, the Committee **agrees** that noise should remain a standing priority item on its agenda.

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Annex K

Report of the Standing Working Group on Environmental Concerns

Members: Rojas-Bracho (Chair), Aguilar, An, Baba, Bando, Berggren, Bjørge, Black-Layne, Borsani, Bortolotto, Brownell, Cañadas, Canese, Carlson, Childerhouse, Clapham, Clark, C., Clark, E., Cooke, Deimer, DeMaster, Di Natale, Dinter, Donahue, Donovan, Engel, Fortuna, Fossi, Friday, Fujise, Funahashi, Gales, George, Greco, Groch, Hatanaka, Hedley, Hester, Hildebrand, Iñíguez, Jean-Benoit, Kawahara, Ketten, KIM, Kishiro, Kock, Krahn, Last, Lauriano, Lawrence, Leaper, Lens, Lima, Lyrholm, Mae, Magloire, Marsili, Martin, Matsuoka, Mattila, Moore, Murase, Natoli, Nishiwaki, Northridge, O'Hara, Okamura, Olafsdottir, Oosthuizen , Ottolenghi, Palazzo, Palka, Pamplin, Panigada, Parsons, Pavan, Payne, Perry, Picciulin, Picciulin, Polacheck, Pomilla, Rambally, Read, Reeves, Reijnders, Reilly, Ridoux, Ritter, Robbins, Rogan, Rose, Rosenbaum, Rowles, Sadler, Secchi, Shimada, Simmonds, Simplice, Sohn, Stachowitsch, Suydam, Taylor, M., Thiele, Tomita, Urbán, Urquiola, Van Waerebeek, Víkingsson, Wada, Walters, Wang, Wells, Williams, Wilson, Yamakage, Yoshida, Zerbini

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6. MINI-SYMPOSIUM ON ACOUSTICS

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6.3 Exposure, effects, and responses

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Recent mass strandings of beaked whales suggest that these species, particularly Cuvier's beaked whale (*Ziphius cavirostris*), are prone to stranding following exposure to high intensity sound that is associated with naval operations and seismic exploration activities. An increased incidence of multi-animal beaked whale stranding events might correlate with the advent of high-intensity sonars that were first deployed on naval ships beginning in the early 1960s. Reports of mass strandings consisting of two or more individuals of Cuvier's beaked whales, compiled from records in the Smithsonian Institution in the USA, show that a quarter (10 of 41) were associated with concurrent naval maneuvers (see Table 1). Incidents occurring in Greece (1996), Bahamas (2000), Canary Islands (2002) and the Gulf of California (2002) were reviewed. These strandings of beaked whales in association with high-intensity sound exposure demonstrate a remarkable pattern. Although Cuvier's beaked whales are the most common species involved in these stranding events (81% of the total number of stranded animals), other beaked whales (including *Mesoplodon europeaus*, *M. densirostris*, and *Hyperoodon ampullatus*) comprise 14% of the total. Other species (*Stenella coeruleoalba*, *Kogia breviceps* and *Balaenoptera acutorostrata*) were also sparsely represented. It is not clear whether (a) *Ziphius cavirostris* is more prone to injury from high-intensity sound than other species, (b) its behavioral response to sound makes it more likely to strand, or (c) it is substantially more abundant than the other affected species at the times and places of exposure. It was noted that the geographical settings for the incidents reviewed were very similar: an island or archipelago with deep water nearby, (appropriate for beaked whale foraging habitat). Nec-

ropsies of stranded animals from these incidents suggested internal bleeding in the eyes, ears, and brain, as well as gas and fat embolisms.

The sound exposure levels modeled (Anon. 2001) at positions of beaked whale sightings (K. Balcomb and D. Claridge *pers. comm.* to J. Hildebrand) in the Bahamas do not exceed 160-170 dB re 1 μPa @ 1m for 10-30 sec. Based on studies of captive bottlenose dolphins and beluga whales, these levels cannot be considered as sufficient for producing even temporary threshold shifts (hearing loss) for the affected animals. Other possible mechanisms that were discussed include physiological non-auditory impacts, or behavioral responses leading to physiological impact. The formation of air emboli as described in Jepson et al. (2003) and Fernández et al. (2004) either due to a behavioral response or directly induced by sound is one hypothesis currently under investigation. Concern was expressed that assessments of stranding events do not account for animals that are severly affected or died but did not strand. Based on photo-identification records of Ziphius in the Bahamas, none of the identified individuals has been resighted since the 2000 stranding event (K. Balcomb *pers. comm.* to R. Brownell).

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6.4 Potential impacts and summary

The SWG synthesized the information from the mini-symposium and discussions, and formulated a series of recommendations to go forward to the full SC. The SWG unanimously agreed that there was now compelling evidence implicating anthropogenic sound as a potential threat to marine mammals. This threat is mani-

fested at both regional and ocean-scale levels that could impact populations of animals. The following listing provides a punctuated summary of these alarming concerns and represents the distillation of some existing data and observations.

(1) Cetaceans are highly adapted to perceive and produce sound.

(2) The amount of sound energy introduced into certain ocean regions by humans has been increasing by at least 3 dB/decade over the last 60 years.

(3) There has been a rise in the amount of noise from oil and gas exploration and production activities, including intense sounds from seismic airgun arrays.

(4) Since the early 1960s, there has been an increase in the use and proliferation of military, anti-submarine sonars, particularly those in the mid-frequency range (2-14 kHz).

(5) There are now several cases of impacts on mysticetes from seismic surveys.

(6) The weight of accumulated evidence now associates mid-frequency, military sonar with atypical beaked whale mass strandings. This evidence is very convincing and appears overwhelming.

(7) For terrestrial species there is now evidence demonstrating dramatic, synergistic effects from two factors acting simultaneously, as opposed to any one factor acting alone.

(8) Research on the effects of anthropogenic noise on cetacean populations should be integrated with ecosystem-based assessment and management of ocean resources, as called for in recent reviews of ocean status

and health (e.g., PEW Ocean Commission Report; US Ocean Commission Report). Specifically, novel application of conservation tools such as designation of critical habitats, Marine Protected Areas (MPAs) and ocean zoning should be investigated as a means to protect cetacean populations from chronic and intense-episodic anthropogenic noise.

The mechanisms by which anthropogenic noises affect cetaceans are not known. The SWG recognizes the important role of science in helping to explain why whales respond behaviorally to or are injured by various sources of man-made sound. However, the SWG also recognizes and wishes to emphasize that measures to protect species and their habitats cannot always wait for ultimate certainty levels of scientific confirmation. In such cases it is appropriate to adopt the precautionary principle. Certainly, for example, in the case of slowly rising ambient noise levels, documenting the negative effect on blue whale populations would require more than a human lifetime. Cases involving the exclusion of a highly endangered population (e.g., western north pacific gray whales) from its critical habitat, or the insidious degradation of a species' critical habitat due to multiple and possibly compounding factors (e.g., noise, contaminants, food depletion), require strong, prompt action and particular vigilance.

The SWG concluded with a series of recommendations. Some of these are specific to a certain type of high intensity, episodic anthropogenic noise (e.g., seismic, mid-frequency military sonar), while others are more general.

Regarding beaked whales and military sonar, the SWG recommends:

(1) A comprehensive review of typical and atypical strandings, in particular to include beaked whales but also other species that strand at the same time.

(2) A comprehensive analysis of the stranding data relative to military activities (e.g., anti-submarine warfare sonars, live ordinance), other abiotic factors such as bathymetry, weather, magnetic anomalies, and biotic factors such as age and sex of stranded animals.

(3) Proper, standardized analyses and evaluations of dead animals. The entire animal must be examined, especially since to date none of the examined animals in the mass strandings has shown acoustic trauma, and because different pathologies might exist depending on location or behavior of the animal when the incident occurs. Also, if a single causal mechanism is operating, commonality of pathologies may be seen. However, it is possible that two or more mechanisms or conditions (e.g., trauma in an animal already compromised by stress of some sort) combine to result in a stranding.

(4) Standardized responses and protocols be developed that can be used globally for documenting and understanding mass stranding events (as recommended in the recent beaked whale workshop in April 2004).

(5) Investigate the correlation of natural sounds (e.g. earthquakes, typhoons, predators) with the mass strandings of beaked whales.

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[REPORT OF THE SCIENTIFIC COMMITTEE OF THE INTERNATIONAL WHALING COMMISSION, 2006]

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Annex K

Report of the Standing Working Group on Environmental Concerns

Members: Rojas-Bracho (Chair), Aguilar, An, Anselme, Bass, Berggren, Bjørge, Brandon, Brownell, Charrassin, Clark, de Stephanis, Deimer-Schuette, DeMaster, Dinter, Dolman, Donovan, Edwards, Engel, Fernandez, Findlay, Fossi, Fujise, Gallego, Galletti, Gedamke, George, Groch, Gronvik, Hatch, Hedgeland, Hedley, Hildebrand, Hucke-Gaete, Hyugaji, Iñiguez, Jackson, Kawahara, Kim, Kitakado, Kock, Krahn, Lambertsen, Lauriano, Lindow, Leaper (Rebecca), Lens, Marsili, Mate, Matsuoka, Mattila, Mazzariol, Miller, C., Miller, J., Moore, Mori, Murase, Nakamura, Nishiwaki, Northridge, O'Hara, Okamura, Ólafsdóttir, Palazzo, Pamplin, Panigada, Parsons, Pavan, Podesta, Porter, Punnett, Rambally, Reeves, Reijnders, Ridoux, Ritter, Rogan, Rosa, Rose, Rosenbaum, Rowles, Schweder, Senn, Shimada, Simmonds, Stachowitsch, Suydam, Tanaka, Tominaga, Tunesi, Urbán, Van Waerebeek, Weilgart, Williams, Yamakage, Yasokawa, Young, Vasquez.

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8.5 Other habitat related issues

8.5.1 Pathological findings of ship strikes and other noise related issues

Antonio Fernández summarised his work on the pathology of stranded beaked whales during a special joint evening session of E and BC. The presentation was en-

titled: 'Pathological findings in stranded beaked whales associated "temporally and spatially" with naval exercises.'

The possibility that exposure to sonar stimuli can lead to the stranding of cetaceans is an issue of increasing interest because of recent strandings temporally and geographically coincident with naval sonar operations. Beaked whales (family Ziphiidae), which are deep-diving whales, are of particular interest because of the notable relationship between beaked whale mass strandings and military operations employing mid-frequency sonar. Mass strandings of beaked whales linked with naval exercises have been described in several locations including: Bonaire in 1974, the Canary Islands in 1985, 1988, and 1989, Greece in 1996, and the Bahamas in 2000.

Past research on the potential for anthropogenic sound to affect marine mammals focused on auditory effects and behaviour modifications following sound exposure. Non-auditory consequences of exposure to sound had, until recently, received less attention. Fernández presented results of pathological investigations on beaked whales that stranded in temporal and spatial association with naval exercises (Table 2).

[Chart Omitted]

On 24 September 2002, 14 beaked whales (three species) were found stranded on Fuerteventura and Lanzarote Islands in the Canary Islands, close to the site of, and at the same time as, an international naval exercise codenamed 'Neo-Tapón 2002'. Strandings began about four hours after the onset of mid-frequency sonar activity. Eight Cuvier's beaked whales, one Blainville's beaked

whale and one Gervais' beaked whale were necropsied and samples were collected for histopathological exam. Complete evaluation of tissues from these animals provided evidence on the manner of their deaths and supported the relationship with the sonar activity (Fernandez *et al.* 2005).

Macroscopically, the whales had severe, diffuse congestion and haemorrhage especially around the acoustic tissues in the jaw, ears, brain and kidneys. Fat emboli and lesions consistent with *in vivo* bubble formation were observed in blood vessels and parenchyma of vital organs (Jepson *et al.*, 2003; Fernandez *et al.*, 2004, 2005). The pathological findings were consistent with those found in a decompression-like sickness in other mammals. The *in vivo* bubble formation and presence of fat embolism found in these animals may have been the result of extreme modification in the whales' diving behaviour in response to sonar. Martín *et al.* (2004) described this incident, as well as eight other cases that had occurred previously in the Canary Islands.

From 11-17 July 2004 an international naval exercise code-named 'Majestic Eagle 2004' took place around 75 nmi north of the Canary Islands. Sonar is known to have been deployed during the exercises. Four Cuvier's beaked whale carcasses drifted ashore on Lanzarote (1) and Fuerteventura (3) four to ten days after the exercises ended. Although the carcasses exhibited moderate to severe autolysis, the three whales that were necropsied revealed lung fat embolism, similar to the previously described cases.

On 16 April 2005 another naval exercise, code-named 'Novel Javelin 2005,' was carried out close to the Canary

Islands. On 19 April, a single Cuvier's beaked whale was found dead on shore at Fuerteventura Island. A disseminated necrotizing vasculitis affecting the lymphatic system, most likely caused by a viral infection, was the pathological diagnosis for this animal. Such pathology is clearly different from those previously discussed in mass-stranded beaked whales associated with naval exercises in the Canary Islands (Neo-tapón 2002 and Majestic Eagle 2004). Information officially released indicated, "Exercise instruction in relation to Anti-submarine Warfare (ASW): for environmental reasons, sonar emissions are strictly forbidden within 50 nautical miles of the Canary Islands. In the present exercises no sonar activities were played."

On 26 January 2006, two non-governmental organisations in Spain—Almería PROMAR and the Spanish Cetacean Society—requested the collaboration of the Unit of Cetacean Research (Veterinary Pathology Unit, Institute for Animal Health, Veterinary School) from Las Palmas University in the Canary Islands, in conducting a forensic pathological examination of two male and two female Cuvier's beaked whales that mass stranded on the Almería coast of southern Spain. Two animals were found alive and two were found dead. The two live animals died soon after being found. Veterinary pathologists carried out necropsies and found all four animals to be in good body (nutritive) condition, with some remains of ingested prey in the digestive tracts. The pathological findings were similar to those described for the strandings associated with the Neo-Tapon 2002 exercise. That is, all four of the animals exhibited 'gas and fat embolic syndrome', attributed in Fernandez *et al.* (2005) to mid-frequency sonar signals on deep diving

species like beaked whales. When whales with this syndrome strand alive, they develop a severe cardiovascular clinico-pathological condition and die shortly afterwards.

Following the presentation, Fernández answered questions for participants. He noted that the Canary Island Veterinary Pathology Unit had necropsied about 400 cetacean specimens from 17 species to date. Of the 400, about 30 were beaked whales. Approximately 25% of the total number of animals necropsied died as a result of anthropogenic causes. Many of the animals died from infectious disease, and a few from neoplasias. The pathological significance of parasitism can vary from low to high depending on the organ(s) affected and the severity of the infestation.

Fernández emphasized the importance of doing necropsies as soon as possible after death and exercising great patience and care in not reaching or releasing diagnoses prematurely. He also stated that cetaceans, like other mammals, are able to handle some gas bubble in their bloodstream without ill effects and therefore it should not be assumed that *any* evidence of gas emboli, regardless of number/size, is automatically diagnostic of 'gas and fat embolic syndrome' as the cause of death. In other words, it is a question of threshold levels below which such emboli may be tolerated and above which the syndrome becomes irreversibly lethal.

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Hawaiian Melon-headed Whale *(Peponacephala electra)* Mass Stranding Event of July 3-4, 2004

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NOAA Technical Memorandum NMFS-OPR-31
April 2006

[Seal Omitted]

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Executive Summary

On July 3-4, 2004, between 150-200 melon–headed whales (*Peponocephala electra*) occupied the shallow waters of Hanalei Bay, Kaua'i, Hawai'i for over 28 hours. Attendees of a canoe blessing observed the animals entering the Bay in a single wave formation at 0700 hrs[1] (local time) on July 3, 2004. The animals were observed moving back into shore from the mouth of the Bay at 0900 hrs. The usually pelagic animals milled in the shallow confined bay and were returned to deeper water with human assistance. The animals were herded out of the Bay with the help of members of the community, the Hanalei Canoe Club, local and federal employees, and volunteers/staff with the Hawaiian Islands Stranding

[1] This time is set by reliable observations and a canoe blessing ceremony.

Response Group beginning at 0930 on July 4, 2004 and were out of visual sight by 1030 hrs.

Only one animal, a calf, was known to have died (on July 5, 2004) following this event. The animal was noted alive and alone in the Bay on the afternoon of July 4, 2004 and was found dead in the Bay the morning of July 5, 2004. On July 7, 2004, a full necropsy, magnetic resonance imaging, and computerized tomography examination were performed on the calf to determine the manner and cause of death. The combination of imaging, necropsy and histological analyses found no evidence of infectious, internal traumatic, congenital, or toxic factors. Although cause of death could not be definitively determined, it is likely that maternal separation, poor nutritional condition, and dehydration contributed to the final demise of the animal. Although we do not know when the calf was separated from the female, the movement into the Bay, the milling and re-grouping may have contributed to the separation or lack of nursing especially if the maternal bond was weak or this was a primiparous calf.

Environmental factors, abiotic and biotic, were analyzed for any anomalous occurrences that would have contributed to the animals entering and remaining in Hanalei Bay. The bathymetry is similar to many other sites within the Hawaiian Island chain and dissimilar to that which has been associated with mass strandings in other parts of the U.S. The weather conditions appear to be normal for this time of year with no fronts or other significant features noted. There was no evidence for unusual distribution or occurrence of predator or prey species, or unusual harmful algal blooms. Weather patterns and bathymetry that have been associated with

mass strandings elsewhere were not found to occur in this instance.

This event was spatially and temporally correlated with Rim of the Pacific Exercises (RIMPAC) which is a biennial, sea control/power projection fleet exercise that has been conducted since 1968 and involves U.S. forces and forces from various Rim-of-the-Pacific nations. Official sonar training and tracking exercises in the Pacific Missile Range Facility (PMRF) warning area did not commence until approximately 0800 hrs (local time) on July 3 and were thus ruled out as a possible trigger for the initial movement into the Bay.

However, the six naval surface vessels transiting to the operational area on July 2 intermittently transmitted active sonar [for ~ 9 hours total from 1315 to 0030] as they approached from the south. The potential for these transmissions to have triggered the whales' movement into Hanalei Bay was investigated. Analyses with the information available indicated that animals to the south and east of Kaua'i could likely have detected active sonar transmissions on July 2, and reached Hanalei Bay on or before 0700 on July 3, 2004. However, data limitations regarding the position of the whales prior to their arrival in the Bay, the magnitude of sonar exposure, behavioral responses of melon-headed whales to acoustic stimuli, and other possible relevant factors preclude a conclusive finding regarding the role of sonar in triggering this event. Propagation modeling suggest that transmissions from sonar use during the July 3 exercise in the PMRF warning area may have been detectable at the mouth of the Bay. If the animals responded negatively to these signals, it may have contributed to their continued presence in the

Bay. The U.S. Navy ceased all active sonar transmissions during exercises in this range on the afternoon of July 3, 2004. Subsequent to the cessation of sonar use, the animals were herded out of the Bay.

While causation of this stranding event may never be unequivocally determined, we consider the active sonar transmissions of July 2-3, 2004, a plausible, if not likely, contributing factor in what may have been a confluence of events. This conclusion is based on: (1) the evidently anomalous nature of the stranding; (2) its close spatio-temporal correlation with wide-scale, sustained use of sonar systems previously associated with stranding of deep diving marine mammals; (3) the directed movement of two groups of transmitting vessels toward the southeast and southwest coast of Kaua'i; (4) the results of acoustic propagation modeling and an analysis of possible animal transit times to the Bay; and (5) the absence of any other compelling causative explanation. The initiation and persistence of this event may have resulted from an interaction of biological and physical factors. The biological factors may have included the presence of an apparently uncommon, deep-diving cetacean species (and possibly an offshore, non-resident group), social interactions among the animals before or after they entered the Bay, and/or unknown predator or prey conditions. The physical factors may have included the presence of nearby deep water, multiple vessels transiting in a directed manner while transmitting active sonar over a sustained period, the presence of surface sound ducting conditions, and/or intermittent and random human interactions while the animals were in the Bay.

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LESSONS FROM MONITORING TRENDS IN ABUNDANCE OF MARINE MAMMALS

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ABSTRACT

We assessed scientists' ability to detect declines of marine mammal stocks based on recent levels of survey effort, when the actual decline is precipitous. We defined a precipitous decline as a 50% decrease in abundance in 15 yr, at which point a stock could be legally classified as "depleted" under the U.S. Marine Mammal Protection Act. We assessed stocks for three categories of cetaceans: large whales (n = 23, most of which are listed as endangered), beaked whales (n = 11, poten-

tially vulnerable to anthropogenic noise), and small whales/ dolphins/porpoises (n = 69, bycatch in fisheries and important abundant predators), for two categories of pinnipeds with substantially different survey precision: counted on land (n = 13) and surveyed on ice (n = 5), and for a category containing polar bear and sea otter stocks (n = 6). The percentage of precipitous declines that would *not* be detected as declines was 72% for large whales, 90% for beaked whales, and 78% for dolphins/ porpoises, 5% for pinnipeds on land, 100% for pinnipeds on ice, and 55% for polar bears/sea otters (based on a one-tailed t-test, α = 0.05), given the frequency and precision of recent monitoring effort. We recommend alternatives to improve performance.

Key words: decision analysis, marine mammals, monitoring, trends, trends in abundance, statistical power.

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Discussion

Given current monitoring levels, our ability to detect precipitous declines in abundance remains low for most stocks of marine mammals in U.S. waters using standard analyses (hypothesis testing using α = 0.05). Thus, we would be unlikely to detect a decline in abundance for cetacean or ice seal stocks similar to the decline in abundance that was associated with the listing of the western stock of Steller sea lion as endangered under the U.S. Endangered Species Act. In fact, of the stocks receiving attention because of observed declines (the western stock of Steller sea lion, several stocks of harbor seals in Alaska, the southwestern stock of sea otter in western Alaska, and Hawaiian monk seals), only the sea otters had relatively low power of detection (Appen-

dix). The detection of sea otter declines occurred because the magnitude of the decline is greater than the 50% decline for which we estimated power. The low precision for most marine mammals, including most large whales, also means that detecting recovery of endangered species for consideration in delisting decisions is similarly problematic.

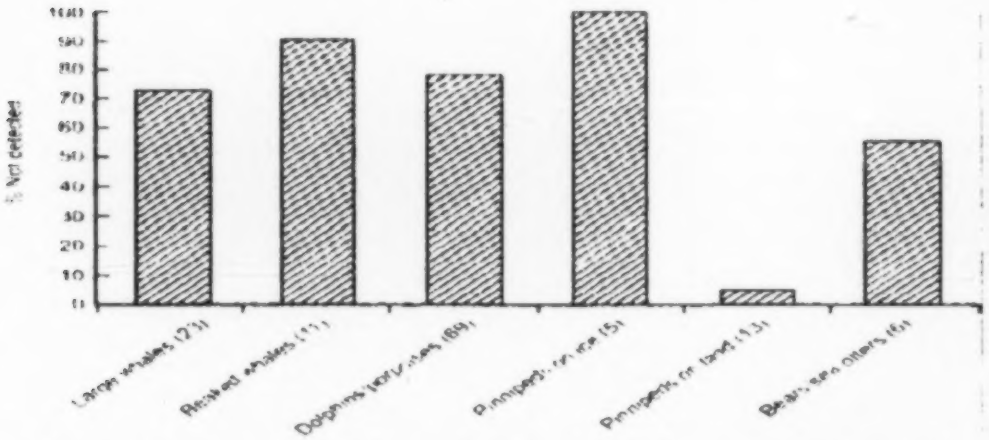

Figure 2. Percent of stocks for which a precipitous decline would not be detected as a decline for different categories of cetaceans, pinnipeds, and the category of polar bears and sea otters. Numbers in parentheses indicate the number of stocks examined.

Although this paper deals with stocks in U.S. waters, many of the factors that lead to low precision in marine mammal abundance estimates are likely to be global problems. For example, beaked whales are always difficult to see when they are on the surface, spend most of their time below the surface, and are found at low densities over large areas (Barlow *et al.* 2006). For cetaceans with highly pelagic distributions, detecting declines is likely more problematic than depicted here as many of

the world's oceans, particularly the Indian Ocean and the South Atlantic, have very little survey effort.

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APPENDIX

This appendix contains coefficients of variation in abundance estimates (CV), survey intervals, statistical power to detect a 50% decline in 15 yr for stocks of marine mammals found in U.S. waters used in this paper. The sources of data for each stock are given in bold if the CVs were from peer-reviewed papers, in italics if the CVs were from readily available documents or reports that present complete methods, or in plain font if the CVs were not readily available from a public source or if the source did not present complete methods. Readers are cautioned not to extract CV information when sources are neither in bold or italics as these are considered unreviewed data. Multiple sources mean either that the CV in the SAR was derived from multiple abundance estimates (for cetaceans) or that the CV was derived from a time series (for pinnipeds); therefore, the CV in the table will not appear in any single reference. Ice seals are noted with an asterisk. Statistical power to detect a decline (power 15 yr) was calculated using the CV and survey interval data except as noted below. For some stocks "na" (not available) appears in the CV and/or survey interval column. When it appears in both columns, that is, there are no abundance data, we assume the probability of detecting a decline is 0.0. There are two cases where there is no CV but a survey interval. In both cases, southern resident killer whales, where all individuals are known and identified each year and North Atlantic right whales where a large fraction is identified each year, we assumed that the probability

of detecting a loss of half the individuals over 15 yr was 1.0. Abbreviations are as follows: WNA=Western North Atlantic; cont. = continental; Mex. = Mexico; OR = Oregon; WA = Washington; CA = California; CNP = Central North Pacific; SEAK = Southeast Alaska.

* * * * *

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Species	Stock	CV	Survey interval	Power 15 yr^{-1}	Source
	Dolphins and Porpoises				
Atlantic spotted dolphin	N. Gulf of Mex. Outer Cont. Shelf/Oceanic	0.27	4	0.26	1, 2
Atlantic spotted dolphin	WNA	0.87	4	0.11	3,4
Atlantic white-sided dolphin	WNA	0.38	4	0.19	4, 5, 6, 7
Beluga whale	Beaufort Sea	0.23	4	0.32	8
Beluga whale	Bristol Bay	0.20	4	0.37	9
Beluga whale	Cook Inlet	0.09	1	1.00	10
Beluga whale	E. Bering Sea	0.24	4	0.30	11
Beluga whale	E. Chukchi Sea	0.20	4	0.37	9
Bottlenose dolphin	CA/OR/WA Offshore	0.66	4	0.13	*12*
Bottlenose dolphin	CA Coastal	0.12	4	0.67	13
Bottlenose dolphin	E. Gulf of Mex. Coastal	0.12	10	0.32	14
Bottlenose dolphin	Gulf of Mex. Bay, Sound, Estuarine	0.57	10	0.12	14
Bottlenose dolphin	Gulf of Mex. Cont. Shelf/Slope	0.26	4	0.28	1
Bottlenose dolphin	N. Gulf of Mex. Coastal	0.26	5	0.35	1
Bottlenose dolphin	N. Gulf of Mex. Oceanic	0.41	5	0.21	2
Bottlenose dolphin	W. Gulf of Mex. Coastal	0.21	10	0.20	*15*
Bottlenose dolphin	WNA Coastal	0.16	3	0.19	14
Bottlenose dolphin	WNA Offshore	0.25	4	0.29	3, 4
Clymene dolphin	N. Gulf of Mex. Oceanic	0.65	4	0.13	2
Clymene dolphin	WNA	0.93	4	0.11	3
Common dolphin	WNA	0.52	4	0.22	4
Common dolphin, short-beaked	CA/OR/WA	0.25	1	0.29	*12*
Common dolphin, long-beaked	CA	0.72	4	0.12	*12*
Dall's porpoise	CA/OR/WA	0.33	4	0.21	*12, 16*
Dall's porpoise	Alaska	0.10	5	0.38	17
Dwarf sperm whale	N. Gulf of Mex. Oceanic	0.29	4	0.24	2
Dwarf sperm whale	WNA	0.57	4	0.14	3, 4

Species	Stock	CV	Survey interval	Power 15 yr[a]	Source
False killer whale	N. Gulf of Mex. Oceanic	0.71	4	0.12	2
Fraser's dolphin	N. Gulf of Mex. Oceanic	0.70	4	0.12	2
Fraser's dolphin	WNA	na	na	0.00	18
Harbor porpoise	Bering Sea	0.22	6	0.21	19
Harbor porpoise	Gulf of Alaska	0.21	5	0.20	19
Harbor porpoise	Gulf of Maine/Bay of Fundy	0.22	4	0.33	5, 6, *20*
Harbor porpoise	Monterey Bay	0.42	3	0.20	*21*
Harbor porpoise	Morro Bay	0.41	3	0.21	*21*
Harbor porpoise	N. CA/S. OR	0.39	3	0.22	*22*
Harbor porpoise	OR/WA Coast	0.38	5	0.11	*22*
Harbor porpoise	San Francisco Russian River	0.39	3	0.22	*21*
Harbor porpoise	SEAK	0.24	7	0.22	19
Harbor porpoise	Washington Inland Waters	0.40	5	0.11	*23*
Killer whale	E. N. Pacific Northern Resident	na	na	0.00	*24*
Killer whale	E. N. Pacific S. Resident	0.00	1	1.00	25
Killer whale	N. Gulf of Mex. Oceanic	0.49	4	0.15	2
Killer whale	WNA	na	na	0.00	18
Melon-headed whale	N. Gulf of Mex. Oceanic	0.55	4	0.14	2
Melon-headed whale	WNA	na	na	0.00	18
Northern right whale dolphin	CA/OR/WA	0.26	4	0.28	*12*
Pacific white-sided dolphin	CA/OR/WA	0.50	4	0.15	*12*
Pacific white-sided dolphin	CNP	0.90	6	0.12	26
Pantropical spotted dolphin	N. Gulf of Mex. Oceanic	0.16	4	0.49	2
Pantropical spotted dolphin	WNA	0.56	4	0.14	3, 4
Pilot whale, short-finned	CA/OR/WA	1.02	4	0.12	*12*
Pilot whale, short-finned[18]	N. Gulf of Mex. Oceanic	0.48	4	0.16	2
Pilot whale, long- and short- finned	WNA	0.30	4	0.24	4
Pygmy killer whale	N. Gulf of Mex. Oceanic	0.60	4	0.13	2
Pygmy killer whale	WNA	na	na	0.00	18
Pygmy sperm whale	CA/OR/WA	1.06	4	0.10	*12*
Pygmy sperm whale	N. Gulf of Mex. Oceanic	0.29	4	0.24	2
Pygmy sperm whale	WNA	0.49	4	0.15	3, 4
Risso's dolphin	CA/OR/WA	0.28	4	0.25	*12*
Risso's dolphin	N. Gulf of Mex. Oceanic	0.32	4	0.22	2
Risso's dolphin	WNA	0.29	4	0.24	3, 4
Rough-toothed dolphin	N. Gulf of Mex. Outer Cont. Shelf/Oceanic	0.41	4	0.18	1, 2
Spinner dolphin	N. Gulf of Mex. Oceanic	0.71	4	0.12	2
Spinner dolphin	WNA	na	na	0.00	18
Striped dolphin	CA/OR/WA	0.53	4	0.14	*12*
Striped dolphin	N. Gulf of Mex. Oceanic	0.43	4	0.17	2
Striped dolphin	WNA	0.40	4	0.18	3, 4
White-beaked dolphin	WNA	na	na	0.00	18

Species	Stock	CV	Survey interval	Power 15 yr'	Source
	Large Whales				
Blue whale	Eastern North Pacific	0.24	4	0.32	12[b]
Blue whale	WNA	na	na	0.00	18
Bowhead whale	W. Arctic	0.13	1	0.61	27
Bryde's whale	N. Gulf of Mex. Oceanic	0.61	1	0.13	2
Fin whale	CA/OR/WA	0.31	4	0.24	12
Fin whale	NE Pacific	na	na	0.00	24
Fin whale	WNA	0.21	4	0.35	4, 5
Gray whale	E. N. Pacific	0.10	5	0.58	28
Humpback whale	CNP entire stock	0.10	6	0.45	29
Humpback whale	E. N. Pacific	0.11	1	1.00	12
Humpback whale	Gulf of Maine	0.29	5	0.16	30
Humpback whale	W. N. Pacific	0.08	6	0.53	29
Minke whale	Alaska	na	na	0.00	24
Minke whale	CA/OR/WA	0.73	4	0.12	12
Minke whale	Canadian east coast	0.16	5	0.25	4, 31
N. Pacific right whale	E. N. Pacific	na	na	0.00	24
North Atlantic right whale	WNA	na	2	1.00	18, 32
Sei whale	CA/OR/WA	0.61	1	0.13	12
Sei whale	Nova Scotia	na	na	0.00	18
Sperm whale	CA/OR/WA	0.41	1	0.18	12
Sperm whale	N. Atlantic	0.36	1	0.20	3, 4
Sperm whale	N. Gulf of Mex.	0.25	1	0.32	2
Sperm whale	N. Pacific	na	na	0.00	24
	Beaked Whales				
Baird's beaked whale	Alaska	na	na	0.00	24
Baird's beaked whale	CA/OR/WA	0.92	4	0.11	12
Blainville's beaked whale	N. Gulf of Mex. Oceanic	0.41	1	0.18	2
Cuvier's beaked whale	Alaska	na	na	0.00	24
Cuvier's beaked whale	CA/OR/WA	1.06	1	0.10	12
Cuvier's beaked whale	N. Gulf of Mex. Oceanic	0.47	1	0.16	2
Cuvier's beaked whale/ Mesoplodon beaked whales	WNA	0.31	4	0.21	12
Gervais' beaked whale	N. Gulf of Mex. Oceanic	0.41	1	0.18	2
Mesoplodon beaked whales	CA/OR/WA	0.68	4	0.13	12
Northern bottlenose whale	WNA	na	na	0.00	18
Stejneger's beaked whale	Alaska	na	na	0.00	24
	Pinnipeds				
Bearded seal[c]	Alaska	na	na	0.00	24
CA sea lion	Pacific	0.29	1	0.76	33, 34
Harbor seal	Bering Sea	0.06	10	0.59	35
Harbor seal	California Pacific	0.11	1	1.00	36
Harbor seal	Gulf of Alaska	0.02	2	1.00	37, 38, 39
Harbor seal	OR/WA Coast	0.12	1	1.00	40, 41, 42
Harbor seal	SEAK	0.03	1	1.00	43
Harbor seal	WA inland waters	0.15	1	1.00	40
Harbor seal	WNA	0.10	1	1.00	44

Species	Stock	CV	Survey interval	Power 15 yr[a]	Source
Hawaiian monk seal	Hawaii	na	1	1.00	48
Northern elephant seal	Pacific	0.08	1	1.00	45, 46, 47, 48
Northern fur seal	Eastern Pacific	0.05	2	1.00	49
Ribbon seal[b]	Alaska	na	na	0.00	24
Ringed seal[b]	Alaska	na	na	0.00	24
Spotted seal[b]	Alaska	na	na	0.00	24
Steller sea lion	Eastern U.S. Stock	0.06	2	1.00	50, 51, 52, 53, 54, 55
Steller sea lion	Western U.S. Stock		2	1.00	53, 54, 55, 56
Walrus[c]	Alaska	na	na	0.00	18
	Polar bears/Sea otters				
Polar bear	Alaska	na	na	0.00	18
Sea otter	SEAK	0.37	10	0.14	57, 58
Sea otter	Southcentral AK	0.16	10	0.25	58, 59
Sea otter	Southwest AK	0.13	10	0.50	59, 60
Sea otter	WA	na	1	1.00	61
Southern sea otter	CA	na	1	1.00	61

[a]All nonzero values are statistical power. Zero values are inferred probability of detection of decline given that there is no monitoring of abundance for these stocks.

[b]For recently peer-reviewed estimate see Calambokidis and Barlow, 2004.

[c]For a recently peer reviewed estimate see Barlow and Taylor, 2005.

Joint Interim Report
Bahamas Marine Mammal Stranding
Event of 15-16 March 2000

December 2001

[Seal Omitted]

U.S. Department of Commerce
Donald L. Evans, Secretary

National Oceanic and Atmospheric Administration
Vice Admiral Conrad C. Lautenbacher, Jr. USN (Ret),
Under Secretary for Oceans and Atmosphere

National Marine Fisheries Service
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Secretary of the Navy
Gordon R. England

Under Secretary of the Navy
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Executive Summary

Overview

On March 15 and 16, 2000, a multi species, mass stranding of 17 cetaceans was discovered in the Northeast and Northwest Providence Channels of the Bahamas Islands (a mass stranding is defined as two or more animals). Seven of the animals are known to have died, ten other animals were returned to the water alive. A comprehensive investigation into all possible causes of the stranding was quickly launched. Based upon necropsies of the dead animals it was preliminarily determined that they had experienced some sort of acoustic or impulse trauma that led to their stranding and subsequent death. Detailed microscopic studies were initiated to identify the mechanism by which this acoustic or impulse source caused trauma. Most, but not all, lines of investigation have now been completed.

Based on the way in which the strandings coincided with ongoing naval activity involving tactical mid-range frequency sonar use in terms of both time and geography, the nature of the physiological effects experienced by the dead animals, and the absence of any other acoustic sources, the investigation team concludes that tactical mid-range frequency sonars aboard U.S. Navy ships that were in use during the sonar exercise in question were the most plausible source of this acoustic or impulse trauma. This sound source was active in a complex environment that included the presence of a strong surface duct, unusual underwater bathymetry, intensive active use of multiple sonar units over an extended period of time, a constricted channel with limited egress,

and the presence of beaked whales that appear to be sensitive to the frequencies produced by these sonars. The investigation team concludes that the cause of this stranding event was the confluence of the Navy tactical mid-range frequency sonar and the contributory factors noted above acting together. Combinations of factors different from this one may be more or less likely to cause strandings. Research should focus on identifying problematic combinations so they can be avoided. The actual mechanisms by which these sonar sounds could have caused animals to strand, or their tissues to be damaged, have not yet been revealed, but research is under way. This research, along with other research on the impacts of sonar sounds on marine mammals, increased knowledge of marine mammal densities, increased knowledge of causes of beaked whale strandings, increased knowledge of beaked whale anatomy, physiology and medicine, and further research on sonar propagation, will provide valuable information for determining which combinations of factors are most likely to cause another mass stranding event. SURTASS LFA, another Navy sonar, had no involvement in this event.

This report reviews the evidence that led to the above conclusions, describes a program of research aimed at answering the outstanding questions on the impacts of tactical mid-range frequency sonar, and lists interim mitigation measures for future sonar operations. All technical terms used in this report are defined in a Glossary at the end. This is an interim report; Conclusions and Recommendations appearing here could change somewhat as final results become available. The major findings of each part of the investigation are summarized below.

Biological Investigation

A biological report compiled by NOAA describes the stranding event and the results of biological examinations that were conducted on the dead animals. Seventeen cetaceans involving four species (Cuvier's beaked whales, Blainville's beaked whales, Minke whales, and a spotted dolphin) were found stranded within a 36 hour period along a 240 km arc in the Northeast and Northwest Providence Channels of the northern Bahamas Islands. Only odontocetes (toothed whales) are known to mass strand. Beaked whales mass strand much less often than other odontocetes. Cuvier's beaked whale mass strand more frequently (20 known events) than other beaked whale species. Only two other mass stranding events of beaked whales have been reported for the Bahamas since 1864. From their condition, the animals in this investigation most likely all stranded on March 15, although some were not discovered until March 16. Strandings were first noted at the southern end of the channels and reports proceeded northwest throughout March 15.

Seven animals died, including five Cuvier's beaked whales, one Blainville's beaked whale, and one spotted dolphin. Of the six necropsies that were performed, only three animals (one Cuvier's beaked whale, one Blainville's beaked whale, and the spotted dolphin) were sufficiently fresh to clearly examine the lesions. Two of six animals were buried for two days and were later exhumed for complete necropsy. A sixth animal was examined five days later and found to be in advanced decomposition. The necropsy on the spotted dolphin revealed the animal died with systemic debilitating disease. It

was considered unrelated to the mass stranding event cluster.

All five beaked whales examined by necropsy were in good body condition, and none showed evidence of debilitating infectious disease, ship strike, blunt contact trauma, or fishery related injuries. Three of the beaked whales had food remains in their stomachs. Some type of auditory structural damage was found in four beaked whales examined, specifically bloody effusions or hemorrhage near and around the ears. The most significant findings, which were found in the two freshest specimens, consisted of bilateral intracochlear and unilateral temporal region subarachnoid hemorrhage with blood clots bilaterally in the lateral ventricles. Pathologists concluded that the hemorrhages occurred before death and would not necessarily have been fatal or have caused permanent hearing loss in terrestrial mammals. However, such hemorrhages are debilitative and may have compromised hearing or navigational abilities, resulting in disorientation and subsequent stranding. Three animals also had small hemorrhages in the acoustic fats (along the jaw and in the melon), but it has not yet been determined whether these hemorrhages occurred before or after death.

The most likely cause of the observed trauma was either acoustic or impulse injuries. Pathological analysis alone cannot differentiate between far-field blast effects and acoustic induced injury from single or multiple events. However, review of acoustic records show that no explosions occurred at the time of the strandings. Therefore, by deduction, it is reasonable to assume that the hemorrhages were acoustically induced. The beaked whales showed evidence of overheating, cardiovascular

collapse, and physiological shock, a cascade of physiological events that commonly results in death after stranding. They were the most likely immediate cause of death, although the offshore acoustic event triggered this cascade of events.

Passive Acoustic Recording

A report prepared by NOAA notes that the agency was operating two passive acoustic monitoring arrays that could detect sounds from the Bahamas during the time frame in question. One array, that was located 100 nautical miles south of the stranding site was not recording continuously and may have missed an explosion if one occurred. The other array, located on the mid-Atlantic ridge, was recording continuously, but showed no evidence of an explosion or geological event (earthquake etc.). These recordings ruled out the possibility that a distant explosion could have been the causative acoustic event.

Ship Movements and Acoustic Modeling

Commander in Chief, U.S. Atlantic Fleet prepared a report (presented here in abstract only), which describes in detail the timing and courses of U.S. Navy ships in the Northeast and Northwest Providence Channels on March 15, 2000, the kinds of sonars used, modes of operation, and frequencies and power settings employed. The ships were operating in the Providence Channels because of unfavorable political conditions in their usual range near Vieques, Puerto Rico.

Numerous ships transited from the southeast to the northwest in generally the same pattern in which strandings were discovered. Five ships used their main-

frame active sonar in the channels during the time of interest. A detailed acoustic analysis was prepared for four of them (referred to as ships A, B, C, and D). Ships A and B operated the tactical mid-frequency sonar designated AN/SQS-53C [center frequencies 2.6 and 3.3 kHz (kilohertz) usually at source levels of 235 dB]. Ships C and D operated sonar designated AN/SQS-56 (center frequencies 6.8 to 8.2 kHz, usually at source levels of 223 dB). Ships B, C, and D were in the channel from approximately midnight March 14 to approximately noon March 15. Ship A and five others were in the channel from approximately 6 AM to approximately 4 PM on March 15, four to six hours behind ships B, C, and D.

During the 16 hour period in which the ships transited the channel using sonar, each ship pinged its sonar approximately every 24 seconds, with pings from nearby ships staggered in time so as not to coincide. Because the ships did not operate at the same frequencies, and because the ships with the same frequency sonars did not operate in the same temporal and spatial proximity, there is little likelihood of increased sound pressure level from multiple, simultaneous pings.

An acoustic modeling report by the Office of Naval Research (ONR) describes how sound from the above-mentioned tactical mid-range frequency sonars would have propagated in the Providence Channels the day of the stranding. Using environmental data from the day in question, as well as historic data for the site in question, various acoustic propagation models were run. The propagation model and Monte Carlo methods used to simulate natural variability amount to a worst-case example. The models all yielded very similar results, indicating a surface duct that would have concentrated

sound in the top 200 m of water. Thus, reverberation from the sides or bottom of the submarine canyons likely did not contribute significantly. Likewise, the calm seas did little to stop the reflection and caused fewer air bubbles, which dissipate sound energy. Actual animal locations at the time of exposure are unknown, so there is no precise measurement of the amount of ensonification the stranded animals received. Finally, modeling was limited by the lack of evidence supporting a specific Receive Level at which tissue damage will occur for the beaked whales in question.

The models show the sound pressure level that whales could have encountered from these sonars in various parts of the channel. In reviewing the modeling data, it is important to differentiate between the sound pressure level at the source (SL), which is measured at a distance of one meter from the source, and the sound pressure that the animal would receive, or the Receive Level (RL). Additionally, it is important to note that due to spherical spreading of sound, absorption, reflections, scattering, and other phenomena, SL drops markedly as one moves away from the source.

In brief, modeling for the AN/SQS-56 sonar indicated sound pressure levels greater than 180 dB would usually have been encountered no more than 300 m from the source horizontally, and no more than 200 m vertically (the depth of the duct). For the AN/SQS-53C sonar operated at nominal source level of 235 dB, the model indicates sound pressure levels greater than 180 dB would usually have been encountered no more than 1,000 m from the source horizontally, and no more than 200 m vertically. During a brief time period when ship B operated its AN/SQS-53C system at a higher power setting,

the model indicates sound pressure levels greater than 180 dB no more than 5,000 m from the source horizontally, and 1,400 m vertically. This period of increased Source Level is not likely to have caused all 17 strandings because it did not move in a south to north pattern nor cover the whole 240 km span of the stranding sites. All these are very narrow swaths in comparison to the width and depth of the Providence Channels, and most likely in comparison to the distribution of the beaked whales in question.

The rise time of the signal, the time required for the signal to grow from zero to maximum amplitude, can have an impulse-like effect if it is short enough. The rise time of these sonars was 0.4 to 0.1 millisecond, depending on signal frequency. This is not considered brief enough to have an effect like an explosion.

Finally, the modeling team concluded that it was not likely that sound pressure level was increased by multiple, simultaneous sonar pings. The greatest additive effects occur when signals have nearly identical phases and amplitudes. These sonars did not ping simultaneously, so the conditions for an additive effect were almost never met.

Follow-up Research Actions

A report by the Office of Naval Research summarizes the follow-up research actions that are needed to understand factors that contributed to the stranding event. The Recommended Research Actions section details research that would help to 1) identify the mechanism(s) that led to the physiological effects observed, and 2) mitigate the effects of these sonars in future operations. This list does not purport to be an exhaustive compila-

tion of all possible actions, but does describe projects already under way, being planned, or feasible but not yet funded, which collectively are intended to reduce or eliminate further strandings of this type.

Conclusions and Recommendations

To the maximum extent practical, the Navy will adopt measures in its future peacetime training, including those involving the use of tactical mid-range sonars, to avoid the taking of marine mammals. Under the circumstances investigated in this report, two actions are recommended for the Navy. These are to understand the mechanisms by which sonar sounds affect marine mammal tissue or behavior, and to concurrently put into place mitigation measures that will protect animals to the maximum extent possible and not jeopardize National Security.

Biological Investigation

MASS STRANDING EVENT IN NORTHERN BAHAMAS, MARCH 15-16, 2000

* * * * *

Gross Findings and Computerized Tomography

Specimen condition. Of the six necropsies performed, only three animals (1 Cuvier's beaked whale, 1 Blainville's beaked whale, and 1 spotted dolphin) were sufficiently fresh to provide relatively clear lesions for evaluation and interpretation (the actual necropsies were conducted hours after death and/or heads were frozen soon after death for later examination). Only one of these was a complete necropsy (spotted dolphin) in which the animal carcass was thoroughly examined by trained per-

sonnel and organs were examined and tissues collected. Two of the six animals were buried two days following their death and were later exhumed (within four to sixteen hours) for complete necropsy and collection of the ears. A sixth animal was examined five days later and found to be in a state of advanced decomposition indicating that the animal had stranded and died several days prior to examination (on the same day as the other strandings). The tissues from the two exhumed animals were severely decomposed. The heads of six animals were examined by gross dissection. Three were badly decomposed and were examined on-site post exhumation, and three heads were reasonably fresh (1 Cuvier's beaked whale, 1 Blainville's beaked whale, and 1 spotted dolphin). The three best-preserved specimens, two beaked whale heads and one intact spotted dolphin carcass, were frozen on site for later examinations by computerized tomography (CT) followed by gross dissection and histology.

Findings.

Spotted Dolphin. Gross necropsy of the spotted dolphin showed that the animal was in poor body condition with associated disease. Computerized tomography scans and subsequent dissection revealed that this animal had extensive sinus disease, necrotic deposits from long term inflammation of the middle and peribullar areas bilaterally, and evidence of systemic debilitating disease. The spotted dolphin stranding site was acoustically isolated from the main exercise and from the duct that occurred in the Providence Channels, leeward waters in which the beaked whale strandings occurred. Due to the dissimilar pathology (see below), distant geographic location of this stranding relative to the rest of

the strandings (Figure 1), presence of a land barrier and currents that separated it from acoustic sources on the other side of the island, and the absence of conspecifics or other delphinids in this stranding event, the stranding of this animal was considered unrelated to the mass stranding event cluster. Therefore this animal will not be considered in further discussions in the investigation of this mass stranding event; however, the CT scans and histopathology of the ears will be used in the ear pathology database for comparisons.

[Diagrams Omitted]

Beaked Whales. All beaked whale carcasses examined by necropsy had similar gross (n=5) and cranial CT findings (n=2). Even the moderately decomposed animals had lesions in common with the fresher animals, although the most reliable findings are those found in the freshest tissues. Gross necropsy showed that all five beaked whales examined were in good body condition, and none showed evidence of significant debilitating infectious disease, ship strike, blunt or other overt contact trauma, or fishery related injuries. The male Blainville's beaked whale, which was the best preserved beaked whale, had renal capsular hemorrhage, mild lung hemorrhage, and heart muscle lesions which are often seen in strandings (Turnbull and Cowan, 1998), and bruising of the larynx. There was no evidence of external or subcutaneous hemorrhages such as those seen in boat strikes or interspecific aggression in any of the beaked whales examined. There was no evidence of gastric obstruction from ingested marine debris or fishery interactions which have been found in some single stranded beaked whales along the U.S. Atlantic coast. Many of the beaked whales did have, however, superfi-

cial abrasions typical of beach stranded live animals or animals that have rolled in the surf while alive.

The results from the beaked whale head dissections and CT scans revealed no evidence of fractures or cutaneous/subcutaneous hemorrhages nor other evidence consistent with blunt trauma or primary blast shockwave from an explosion. There was strong evidence indicative of acoustic trauma in the two freshest beaked whale heads. The most significant findings consisted of bilateral intra-cochlear and unilateral temporal region subarachnoid hemorrhage with blood clots bilaterally in the lateral ventricles in the Blainville's beaked whale and intra-cochlear hemorrhages in the Cuvier's beaked whale (Figure 3).

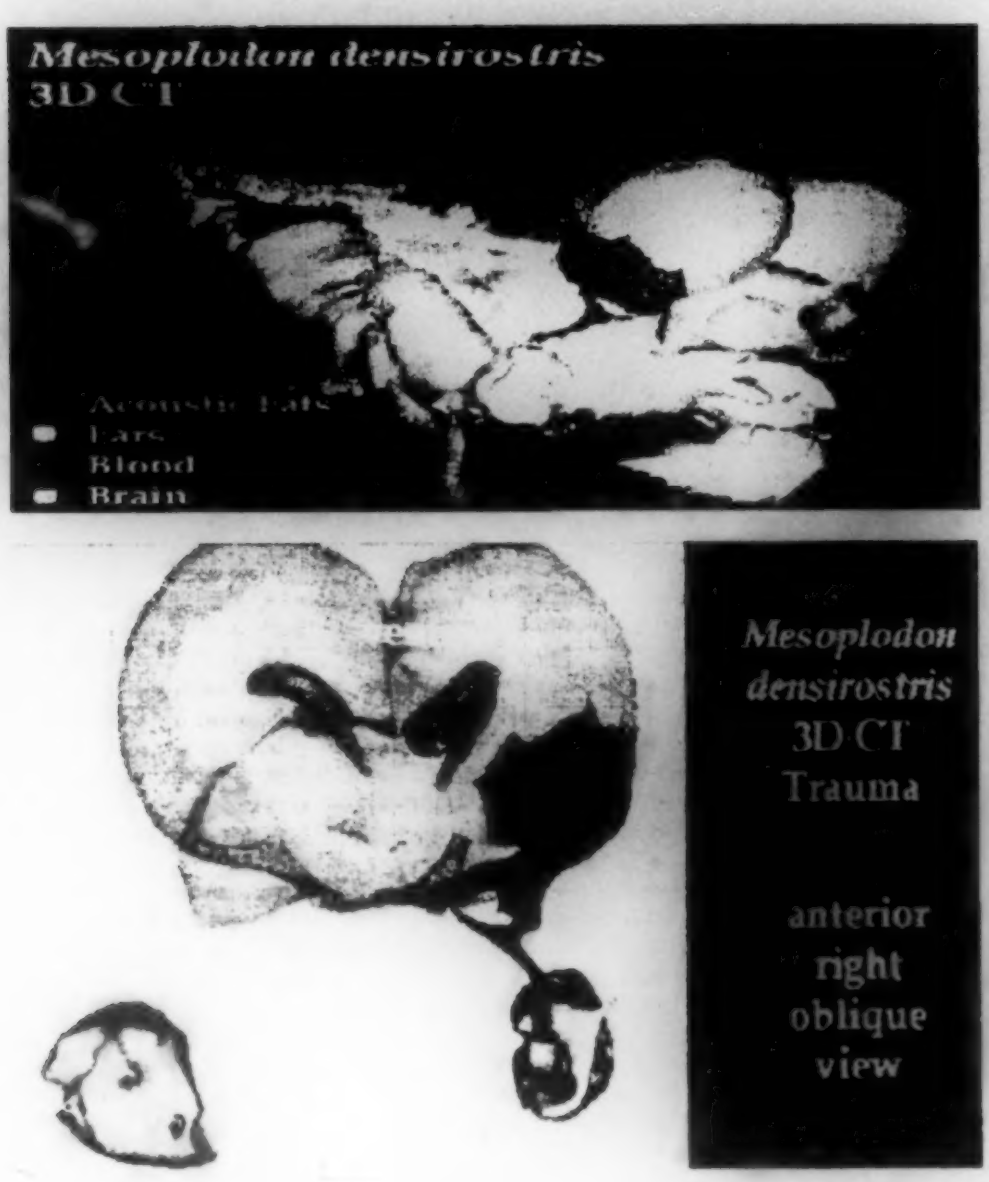

Figure 3: Three dimensional reconstruction of two dimensional computerized tomographic images of the freshest specimen, Blainville's beaked whale. The images point out the positions of the hemorrhage found in this specimen relative to identifiable head structures. (sah = Subarachnoid hemorrhage; iac = internal audi-

tory canal; caq = cochlear aquaduct; ventricle = lateral ventricle of brain).

Similar ear injuries were seen grossly in the two moderately decomposed Cuvier's beaked whales as well as intracranial staining. In simpler terms, there were deposits of blood within some of the inner ear chambers, and in at least one animal the blood trail can be traced to a hemorrhage in a discrete region of a fluid space surrounding the temporal regions and within a ventricle of the brain. Some type of auditory structural damage findings are present in all four beaked whales examined (all showed bloody effusions or hemorrhage near and around the ears). However, for the decomposed animals, these findings by themselves would not be definitive because of the difficulty of distinguishing them from necrotic or non-lesional autolytic changes. However, the presence of these changes in light of matching lesions in the fresher animals increases the likelihood that they were incurred before death. The presence of blood in only restricted intracranial spaces and the intact inner ear membranes in the best preserved ear are not consistent with simple post-mortem pooling. Indiscriminate post-mortem pooling is generally greater in the gravitationally dependent or down side on the beach and occurs throughout the whole ear because normal ear tissues that seal and divide the inner ear are lost through post-mortem degradation. The pattern of injury in the two freshest animals, therefore, suggests the ears were structurally intact and the animals were alive at the time of injury. In summary, this pattern of damage is most consistent with acoustic trauma. Additional analyses, such as light microscopy, are underway on all specimens

that will better characterize the damage and determine with greater certainty any contributory causes (see histopathology section).

Life history

Stomach contents were examined from three animals (2 Cuvier's beaked whale and 1 Blainville's beaked whale). No prey remains were found in the stomach of the Blainville's beaked whale; however, the two Cuvier's beaked whale stomachs contained small quantities of cephalopod and crustacean remains that were consistent with other beaked whale prey examinations (Clarke, 1996). Age class determinations are underway using examination of growth layer groups in sectioned teeth. Renal parasite identification and genetic analyses are also pending.

Histopathology

Post cranial histopathology. Two independent pathologists examined tissues from four animals (3 Cuvier's beaked whales and 1 Blainville's beaked whale). In two of the Cuvier's beaked whales (Zc 10 and Zc 11), advanced post-mortem decomposition hampered histological interpretation of the tissues. Neither the exact cause of death nor any contributory disease was evident in these two severely decomposed animals. However the acute pulmonary edema and congestion observed in these two animals are common nonspecific findings seen in stranded cetaceans, particularly in those which strand live and subsequently die on the beach. Examination of tissues from the remaining Cuvier's beaked whales (Zc 7 and 14) revealed moderate to severe autolysis which precluded in-depth analyses. Inflammatory changes were seen in the lymph nodes of the fresher animal

(Zc8); however, these inflammatory changes are commonly seen in stranded wild odontocetes, often associated with parasitism. The Blainville's beaked whale (Md12) tissues were the freshest of the four sets examined, and analyses of multiple organs, post-cranially, did not reveal a cause of death or evidence of chronic, debilitating disease. The heart showed evidence of acute myocardial contraction band necrosis, a not uncommon finding in stranded odontocetes, which has been attributed to elevated endogenous catecholamine in other animals and humans (Turnbull and Cowan, 1998). The kidneys showed evidence of acute capsular and subcapsular hemorrhage. Multiple organs showed signs of congestion and mild hemorrhage, a common non-specific terminal finding in stranded odontocetes. In addition, this animal also showed evidence of inflammation in the lungs and associated lymph nodes similar to that commonly associated with parasitism in wild odontocetes. Parasites are common in free ranging whales.

Cranial/ear histopathology. Final tissue analyses, results and interpretations are pending for several animals (Zc10, 11, 8 and Md12). Soft tissues were collected from the head of one Blainville's beaked whale (Md12) and one Cuvier's beaked whale (Zc8) and have been examined by two pathologists. Brain tissue is currently being examined from these two animals for structural lesions and for evidence of infectious disease such as morbillivirus. Ear tissues were collected from three Cuvier's beaked whales involved in the Bahamas investigation, one Blainville's beaked whale from the Bahamas mass stranding, the spotted dolphin from the Bahamas stranding, other delphinids and *Ziphius* from unrelated single and mass strandings. The tissues have been pre-

pared, cut, and examinations are currently underway. Preliminary histological results from two sets of *Ziphius* ears (Zc10 and Zc8) that were decalcified using acid and acid/EDTA combinations show the presence of an eosinophilic precipitate (indicating an antemortem insult), blood in primarily the apex and base of the cochlea (suggesting a neural canal and CSF entry to the ear), loss of auditory neurons and metabolic tissues, and labyrinthine collapse. These findings are consistent with multiple pathologic conditions, including impulse trauma, aging, and subarachnoid hemorrhage effects. Acoustic fat tissue from the Blainville's beaked whale and one Cuvier's beaked whale are being re-examined, and tissues are being processed for further pathological examinations. Histologic analyses are underway on six additional ears including ears from three of the affected beaked whales as well as from control specimens. Control specimens include ears from beaked whales that were single strandings, not associated with this event.

Discussion

The necropsy findings described above show that there were significant cranial lesions among the beaked whales in this event, but not in the single delphinid. The findings suggest that some acoustic or pressure event occurred that had characteristics especially significant or traumatic for these beaked whale species. Based on the current medical and experimental data, the hemorrhagic patterns observed in these animals can be found in the following etiologies: birth trauma, spontaneous subarachnoid hemorrhage and hyperemia, vestibular atelectasis, diathetic disease (i.e., disseminated intravascular coagulation and septicemia), direct or contact concussive trauma, auditory concussion from nonimpulse

sources, sonic booms, baro-trauma, and concussive acoustic trauma, particularly from blasts or intense impulse events. Age of the stranded animals eliminates birth trauma as a cause. Spontaneous subarachnoid hemorrhage is also not likely due to the low probability that so many animals would be affected simultaneously. When diathetic diseases are present, there are usually significant concomitant hemorrhages noted in multiple organ systems either as small or large hemorrhages, which were not observed in these animals. Diathetic conditions, typically attributed to terminal Disseminated Intravascular Coagulation, have been seen in stranded marine mammals, but are evidenced by multi-organ hemorrhages. However, whales and dolphins are known to have unusual clotting mechanisms and this may or may not have played a role in the suite of injuries seen in this investigation. Some odontocetes are known to have an absence of Hageman's Factor (clotting factor XII) and Fletcher Factor activity (plasma Prekallikrein) (Walsh et al, 2001; Parry, 1993), and Sei whales were noted to have prolonged partial thromboplastin time with no detectable Factor XII, XI, or Fletcher Factor (Saito et al., 1976 and Bosssart et al., 2001). Studies of hemostasis have not been performed on beaked whales, therefore, their clotting mechanisms are still unknown. It is unknown whether beaked whales have similar anomalies or other clotting differences and whether clotting mechanisms or dysfunctions unique to beaked whales or cetaceans may have had a role in the hemorrhages noted in these animals. Contact concussive injury was ruled out since there was no other external, internal, or subcutaneous evidence indicating blunt force contact trauma. Contrecoup injuries (leading to leptomeningeal hemorrhages) are possible with an animal

struggling on the beach. However, this type of injury has not been commonly observed in individual stranded marine mammals nor in a group of stranded animals, and contrecoup is not adequate to explain the bilateral trauma observed in some of these animals. Therefore, the most likely causes of the traumas seen are acoustic or impulse injuries; however, technically the analyses to date cannot differentiate between far-field blast effects and acoustic induced injury from single or multiple sources. Acoustic monitoring revealed no explosions at the time of the strandings. Therefore, by deduction, it is reasonable to assume the injuries were acoustically induced.

The combination of timing, location, species composition, and pathologies in this stranding event has several important implications. First, the good body condition, lack of chronic disease (in contrast to the spotted dolphin), and lack of external hemorrhage or fractures suggest that these animals did not die of a chronic or debilitating disease process nor of an acute blunt trauma such as a ship strike or near-field blast. Blunt trauma was ruled out by the absence of superficial contusions or correlated fractures. The acoustic record has ruled out a sudden blast event. Second, the presence and distribution of intracochlear blood and subarachnoid hemorrhage in these animals is consistent with a transient, intense pressure or acoustic event (but is not pathognomonic). Third, the observed bilateral intracochlear blood and temporal region subarachnoid hemorrhage do not necessarily indicate permanent hearing loss. Such pathologies are not necessarily fatal in terrestrial animals, however we do not know what effects these would have on survival in deep diving marine mammals. While

in humans these lesions are often accompanied by painful headaches, they typically result in no permanent hearing loss (Schukneckt, 1993). Similar, experimentally-induced lesions in research animal models also result in temporary rather than permanent hearing loss in the majority of animals (Reinis et al, 1980) and not death. However, it must be noted that subarachnoid hemorrhage can be a serious event and can lead to increased intracranial pressure and significant parenchymal damage and death (Summer et al, 1995). The severity of the lesions is dependent on their duration, location, and size. In addition, the effects of subarachnoid hemorrhage and intracochlear blood in deep diving mammals or mammals with coagulopathies may be more profound than in terrestrial mammals.

The pathologic lesions indicative of cardiovascular collapse and shock are common findings in stranded animals. Cetaceans are physiologically and morphologically adapted to live in an aquatic environment with uniform distribution of pressure over all of their body (Ridgway, 1972) providing near-weightlessness. The water environment also provides a rapid mechanism to disseminate body heat. On land when stranded, cetaceans can overheat rapidly, particularly when they are sick or feverish prior to stranding and may develop physiological shock and cardiovascular collapse. These types of lesions, which were found in the stranded beaked whales, are likely to be the immediate cause of death in this event, rather than death resulting directly from an impulse or pressure event. However, the animals likely stranded due to an acoustic insult. That is, an acoustic event is presumed to be a contributing factor to the observed trauma and subsequent stranding re-

sulting in death of the animals. Although the actual causal heirarchy or chain of events may never be known in this mass stranding event, the evidence in the two freshest animals examined provides a plausible theory that the damage and possibly stranding were initiated by an impulse or acoustic event.

In summary, the gross examinations of the beaked whales to date reveal hemorrhages in the acoustic fats of the head, the inner ears and some spaces around the brain with no evidence of external blunt force trauma or chronic debilitating disease. These results lead to a preliminary finding of *in vivo* (in the live animal) acoustic or pressure related trauma. Examinations of the more decomposed animals revealed similar lesions, but decomposition prohibited definitive interpretation. The numbers and coincidence of the strandings combined with these consistent interindividual necropsy findings suggest a broad geographically distributed pressure related trauma. However, we are continuing to examine tissues to further understand and define the injuries. The pathologies in the two freshest animals are consistent with an auditory or impulse trauma event. In other animals (terrestrial) and humans this type of impulse trauma event compromises hearing or the vestibular system, but is not immediately or directly fatal. A final report summarizing all the findings and conclusions is expected to be published in early 2002.

Ship Movements and Acoustic Modeling*

* * * * *

[Diagrams Omitted]

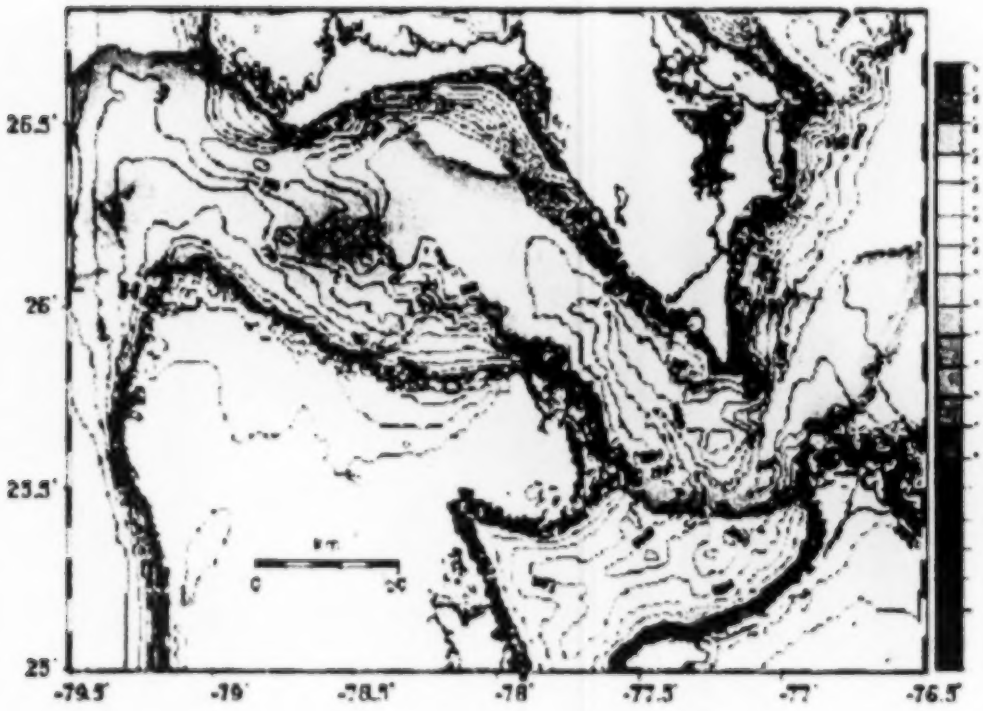

Figure 5c. Ship B (53C sonar in the first group). This figure illustrates the cumulative ping-seconds at levels above 160dB produced by this ship during its transit of the Providence Channel.

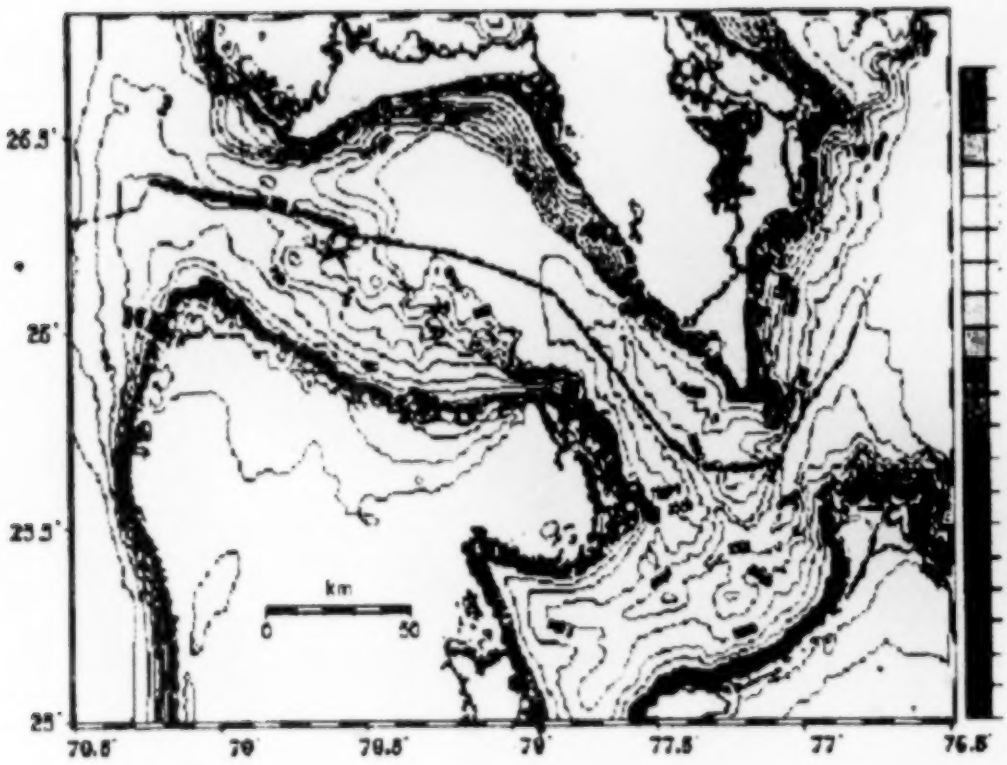

Figure 5d. Ship B (53C sonar in the first group). This figure illustrates the cumulative ping-seconds at levels above 180dB produced by this ship during its transit of the Providence Channel.

PETITIONER'S BRIEF

101

(6)

No. 07-1239

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In the Supreme Court of the United States

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., PETITIONERS

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

BRIEF FOR THE PETITIONERS

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QUESTIONS PRESENTED

The district court found a likelihood that the Navy failed to comply with the National Environmental Policy Act of 1969 (NEPA) and preliminarily enjoined the Navy's use of mid-frequency active (MFA) sonar during training exercises that prepare Navy strike groups for worldwide deployment. The President of the United States determined that the use of MFA sonar during these exercises is "essential to national security," and the Chief of Naval Operations concluded that the injunction unacceptably risks the training of naval forces for deployment to high-threat areas overseas. The Council on Environmental Quality (CEQ), applying a longstanding regulation, accordingly found "emergency circumstances" for interim compliance with NEPA before completing an environmental impact statement. The Ninth Circuit nevertheless sustained the district court's conclusion that no "emergency circumstances" were present and affirmed the preliminary injunction. The questions presented are:

1. Whether CEQ permissibly construed its own regulation in finding "emergency circumstances."

2. Whether, in any event, the preliminary injunction, based on a preliminary finding that the Navy had not satisfied NEPA's procedural requirements, is inconsistent with established equitable principles limiting discretionary injunctive relief.

PARTIES INVOLVED

Petitioners are Donald C. Winter, Secretary of the Navy; U.S. Department of the Navy; Carlos M. Gutierrez, Secretary of Commerce; National Marine Fisheries Service; James W. Balsiger, Acting Assistant Administrator for Fisheries of the National Oceanic and Atmospheric Administration; and Vice Admiral Conrad C. Lautenbacher, Jr., Administrator of the National Oceanic and Atmospheric Administration.

Respondents who were plaintiffs-appellees below are Natural Resources Defense Council, Inc.; International Fund for Animal Welfare; Cetacean Society International; League for Coastal Protection; Ocean Futures Society; and Jean-Michel Cousteau.

Respondent California Coastal Commission was intervenor-appellee below.

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In the Supreme Court of the United States

No. 07-1239

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v.

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BRIEF FOR THE PETITIONERS

OPINIONS BELOW

The opinion and order of the court of appeals (Pet. App. (App.) 1a-90a, 91a-95a) are reported at 518 F.3d 658 and 518 F.3d 704; a prior opinion and order (App. 171a-174a, 175a-194a) are reported at 508 F.3d 885 and 502 F.3d 859. The orders of the district court (App. 96a-137a, 150a-170a, 195a-218a) are reported at 527 F. Supp. 2d 1216 and 530 F. Supp. 2d 1110 and available at 2007 WL 2481037. Other orders of the district court (J.A. 86-89; App. 138a-144a, 145a-149a) are unreported.

JURISDICTION

The judgment of the court of appeals was entered on February 29, 2008. The petition for a writ of certiorari

was filed on March 31, 2008, and was granted on June 23, 2008. The jurisdiction of this Court rests on 28 U.S.C. 1254(1).

STATUTORY AND REGULATORY PROVISIONS INVOLVED

Pertinent provisions are set out in the appendix to the petition for a writ of certiorari. App. 358a-365a.

STATEMENT

This case concerns a matter of vital importance to the Nation's naval defenses. The Southern California Operating Area (SOCAL), an area in the Pacific Ocean west of Southern California and Northern Mexico, has long been used by the United States Navy for training exercises. See Pet. App. 336a-337a (hereinafter "App."); J.A. 123 (maps of SOCAL). The Navy has conducted training using mid-frequency active (MFA) sonar within SOCAL for over 40 years. That historical practice has taken on added significance in light of ongoing hostilities in which the United States is engaged and developments in submarine technology by potentially hostile nations.

In this case, the Navy scheduled a series of up to 14 certification exercises in SOCAL, from February 2007 through January 2009, to prepare naval strike groups for deployment to the western Pacific and Middle East. The use of MFA sonar to detect submarines is an essential element of those exercises, which train the thousands of military personnel in a strike group to operate as an integrated unit in simultaneous air, surface, and undersea warfare. The Navy has completed ten of the planned exercises in compliance with the statutes that provide substantive protection for marine mammals: the Marine Mammal Protection Act of 1972 (MMPA), 16 U.S.C. 1361 *et seq.*, and the Endangered Species Act of 1973 (ESA),

16 U.S.C. 1531 *et seq.* Those ten exercises, like the ones over the past 40 years, have produced no evidence of sonar-related injury to any marine mammal. Various marine mammal species have continued to migrate along the California coast for decades in areas where MFA sonar is routinely used. App. 275a. More importantly, the President has determined that the exercises and the Navy's use of MFA sonar during these exercises is "essential to national security." App. 232a. The Ninth Circuit nevertheless affirmed a preliminary injunction barring use of MFA sonar in critical respects during those exercises based solely on a finding of a likely violation of the procedural provisions of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 *et seq.*

1. a. The existence of a well-equipped and well-trained Navy has long been regarded as vital to the Nation's security. See 2 *State of the Union Messages of the Presidents 1790-1966*, at 2038 (Fred L. Israel ed., 1966) (Theodore Roosevelt) ("an adequate and highly trained navy is the best guaranty against war"); *The Federalist* No. 24, at 160-162 (Alexander Hamilton) (Clinton Rossiter ed., 1961). Congress accordingly has directed that the Navy "shall be organized, trained, and equipped primarily for prompt and sustained combat incident to operations at sea," and it "is responsible for the preparation of naval forces necessary for the effective prosecution of war." 10 U.S.C. 5062(a). Congress has further directed that "[t]he Navy shall develop aircraft, weapons, tactics, technique, organization, and equipment of naval combat and service elements." 10 U.S.C. 5062(d).

In fulfillment of its mission, the Navy deploys forces in strike groups that include either an aircraft carrier (with an air wing) or an amphibious assault ship (with a Marine expeditionary unit) accompanied by three to five

other surface combatant ships. App. 8a n.6; 316a-317a. Each ship trains separately before a strike group is organized, but it must also complete integrated training as part of the strike group to enable the group's thousands of Sailors and Marines to function effectively as a single combat force. App. 8a-9a & n.6, 320a, 342a-343a; J.A. 562-565. The Composite Training Unit Exercises (C2Xs or COMPTUEXs) and Joint Task Force Exercises (JTFEXs) at issue in this case train strike groups in the integrated use of a broad range of air, surface, and subsurface warfare skills requiring close coordination of all strike-group assets. The exercises attempt to replicate with live opposition forces the real-world conditions that strike groups face while performing actual military missions and defending the fleet. *Ibid.*; J.A. 109-110, 133-134; 07-56157 C.A. E.R. (E.R.) 103.

The Navy conducts training exercises the way it would have to fight in actual combat. Integration of the efforts of thousands of personnel to make the exercises a meaningful simulation of real-world military situations is exceptionally complex. The exercises are conducted under "austere, hostile conditions" (J.A. 110) that "stress every aspect of strike group performance" through complex battle problems and advanced, unscripted war games (App. 342a-344a). They hone the skills needed to "examine and prioritize every potential threat, balance competing demands of specific warfare commanders, and apportion limited assets to counter threats," while executing military missions and maintaining "force protection." J.A. 111; see J.A. 109-110, 116-118, 125-126.

Such exercises are often the only opportunity Sailors and Marines have to train in an environment that replicates to the greatest extent possible the real-world military situations they may confront. And the only opportu-

nity for the Navy's Pacific Fleet strike groups to conduct such training is in COMPTUEX and JTFEX exercises in SOCAL. App. 271a, 342a; J.A. 127-128. SOCAL is the only complex on the west coast containing all land, air, and at-sea bases (including an instrumented range on the ocean floor and amphibious landing areas) necessary to train air, sea, and undersea forces simultaneously in an integrated manner. J.A. 118, 123, 141-143, 231; App. 182a, 235a, 327a-328a, 337a.

b. Anti-submarine-warfare training, including the use of MFA sonar, is a critical aspect of such exercises. App. 9a. The Navy continuously deploys strike groups to high-threat areas in the western Pacific and Middle East where the Nation's potential adversaries operate modern diesel-electric submarines that incorporate technological advances making them extremely quiet and difficult to detect. J.A. 230, 566-568, 571; App. 270a-271a. A diesel-electric submarine operating on battery power "is nearly undetectable to U.S. and allied naval forces using passive SONAR alone." App. 274a. MFA sonar is therefore a strike group's *only* effective means to detect and track such submarines before they close within weapons range, and such timely detection therefore "is essential to U.S. Navy ship survivability." App. 269a-271a, 274a, 277a; see J.A. 230-231, 235, 566-567.

Anti-submarine warfare using MFA sonar is extraordinarily complex. The propagation of sound undersea varies significantly with water density, temperature, salinity, currents, above-surface weather conditions, and sea-floor bathymetry; the infinite combinations of those conditions require intensive real-world sonar training to "master the art and processes of identifying submarines in the complex subsurface environment." J.A. 572. Moreover, proficiency in MFA-sonar operations is

"highly perishable." J.A. 566, 572. Repeated training therefore is required to achieve and maintain combat proficiency and effectiveness. *Ibid.*; App. 277a-279a, 356a. That training, moreover, must develop the skills needed to coordinate the anti-submarine efforts of strike-group assets and overcome additional complexities that arise from the simultaneous use of MFA sonar by multiple ships (including mutual interference). J.A. 573.

Training in real-world conditions designed to replicate real-world scenarios with a live, subsurface adversary whose tactics will exploit the ocean's ever-changing complexity is essential. That training is the best practical experience a sonar operator will have before he encounters an actual military crisis. And, as noted, such sonar training must occur as an important element of the coordinated efforts of a carrier or amphibious assault ship, its escort ships, and other assets to conduct simultaneously offensive and defensive air, sea, undersea, and amphibious operations in simulated warfare conditions where resources are limited and time is of the essence. App. 270a-271a, 279a-285a; J.A. 568-570.

2. In preparation for the current series of 14 COMPTUEXs and JTFEXs, the government took a series of actions to assure compliance with environmental statutes.

a. In October 2006, the Navy determined that the MFA-sonar component of the exercises would not "affect" California's coastal zone and submitted a "consistency determination" to the California Coastal Commission pursuant to the Coastal Zone Management Act of 1972 (CZMA), 16 U.S.C. 1451 *et seq.* App. 29a; 16 U.S.C. 1456(c)(1)(A) and (C); 15 C.F.R. 930.41.

b. In 16 U.S.C. 1371(f) (Supp. V 2005), Congress authorized the Secretary of Defense, after conferring with

the Secretary of Commerce (or Interior, as appropriate),[1] to exempt any actions undertaken by the Department of Defense from the MMPA if he determines that it is "necessary for national defense." On January 23, 2007, the Deputy Secretary of Defense, exercising delegated authority, invoked that statutory authorization and issued a two-year National Defense Exemption (NDE II) from the MMPA for certain military readiness activities, including MFA-sonar use during the exercises at issue here, concluding that the exemption was "necessary for the national defense." App. 219a-220a.

The NDE II requires the Navy to comply with 29 marine-mammal-protective measures developed in consultation with the National Marine Fisheries Service (NMFS), the component of the Department of Commerce responsible for implementing the MMPA's protections for marine mammals such as whales and other cetaceans. App. 220a-230a; cf. 16 U.S.C. 1362(12)(A); 50 C.F.R. 216.2, 216.8. Those measures include the use of at least five "extensive[ly] train[ed]" lookouts on each ship to aid in detecting marine mammals; the reduction of a ship's sonar transmission level by 6 dB and 10 dB if a marine mammal is detected within 1000 and 500 yards, respectively; and the cessation of sonar transmissions if a marine mammal is detected within 200 yards. App. 222a-226a.

c. On February 9, 2007, NMFS issued a biological opinion under the ESA (E.R. 768-952 (reproduced in part at J.A. 90-106)), which found that, while MFA-sonar ex-

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[1] The Secretary of Commerce implements MMPA protections for cetaceans (*e.g.*, whales and dolphins) and all pinnipeds (*e.g.*, seals and sea lions) other than walruses. 16 U.S.C. 1362(12)(A). The Secretary of Interior implements MMPA protections for all other marine mammals (*e.g.*, walruses, polar bears, otters, and manatees). *Ibid.*

posure from the SOCAL exercises would likely harass members of threatened or endangered species by temporarily disrupting their behavioral patterns, such exposure is not likely to harm, injure, or kill any listed marine mammal, and, therefore, would not likely jeopardize the continued existence of any listed marine-mammal species. E.R. 907; 16 U.S.C. 1536(a)(2). NMFS further exercised its statutory authority to issue an "incidental take statement," subject to several conditions, that authorizes the Navy to "take" listed species incidental to MFA-sonar use. E.R. 906-910; see 16 U.S.C. 1536(b)(4)(iv) and (*o*)(2).

d. Finally, in February 2007, the Navy issued an environmental assessment (EA) under NEPA for up to 14 planned exercises in SOCAL through January 2009. See E.R. 44-336 (reproduced in part at J.A. 107-224); E.R. 339-635 (EA appendices). An EA is generally prepared by an agency under NEPA in order to determine whether an environmental impact statement (EIS) is required for a proposed action. 40 C.F.R. 1501.3, 1501.4(b) and (c). An EIS, in turn, is prepared for proposed "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. 4332(2)(C); see 40 C.F.R. Pt. 1502. NEPA regulations contemplate that the text of final EISs for "proposals of unusual scope and complexity" shall normally be "less than 300 pages" in length. 40 C.F.R. 1502.7.

The Navy's 293-page EA comprehensively evaluated scientific evidence and the results of computer modeling to predict the effect of MFA sonar on marine mammals. That model defined "Level A" harassment as an action that "injures or has the significant potential to injure a marine mammal" in the "slightest" degree, including any permanent hearing loss (known as a permanent threshold

shift (PTS)). J.A. 160-161, 163, 165. The model defined "Level B" harassment as an action that disturbs a marine mammal by disrupting its natural behavior patterns, including actions predicted either to cause short-term hearing loss (temporary threshold shift (TTS)) or to disrupt temporarily a mammal's behavior without hearing loss (sub-TTS). J.A. 161-165, 175-176.

"All level B harassment" that the Navy modeled involved "short term and temporary" effects that would be "highly unlikely" to cause "behavioral patterns [to be] abandoned or significantly altered." J.A. 175; see J.A. 168, 177-178. The model consciously "over-estimate[d]" the number of harassing exposures by assuming that marine mammals were evenly distributed throughout SOCAL and would not move to avoid sonar exposure, and that sonar use would proceed without the mitigation measures adopted in NDE II. J.A. 171, 175-176.

Using those assumptions, the model predicted 80,684 annual sub-TTS exposures (short-term behavioral disruptions with no hearing loss), 78,877 of which involved various non-endangered, non-threatened species of dolphin, which travel in large pods and are easily detected and protected with the NDE II mitigation measures. J.A. 223-224; see J.A. 181, 184, 189-192, 195-197.[2] The assessment further predicted 4080 annual TTS exposures

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[2] Dolphins, porpoises, and other marine mammals often "purposefully swim[] close to [a Navy] ship" and "'play' by riding on the [ship's] bow-wave," "even during active MFA sonar transmissions," indicating that these animals "are not adversely affected by the use of sonar." App. 346a. The portion of the modified injunction in this case that is triggered by the presence of marine mammals (see p. 12, *infra*) accordingly is inapplicable when "it appears that the dolphins or porpoises are intentionally following the naval vessel to play or ride in the vessel's bow wave." App. 140a, 148a.

(short-term hearing loss), all but 90 of which involved the same seven dolphin species. J.A. 223-224. An additional 274 annual non-injurious (Level-B) exposures were predicted for non-endangered, non-threatened beaked whales—13 TTS and 261 sub-TTS exposures. J.A. 178-179, 185-186, 198-199, 223-224 & n.**. The model's only predicted injuries to marine mammals were eight annual exposures of permanent hearing loss (permanent threshold shift (PTS)) for common dolphins, which the Navy's mitigation measures would be effective in preventing. J.A. 176, 183, 223-224.

The EA further explained that the Navy had adopted a "policy" under which "modeled Level B harassment of beaked whale species" would be "considered as potential Level A harassment." J.A. 200, 226. Accordingly, while the scientific "modeling predicts [only] non-injurious Level B exposures" for beaked whales, the EA tabulated those exposures as non-lethal "Level A" exposures (J.A. 223-224 & n.**) in order to identify them separately as a "potential injury." J.A. 170, 178, 185-186, 199. The EA's "total" of 282 annual Level A exposures thus reflects an estimate of eight annual injury-level exposures for common dolphins (if no mitigation measures were used) and 274 annual non-injurious exposures for beaked whales. J.A. 223-224 & n.**. To provide some context for those figures, commercial fishing caused approximately 650,000 marine-mammal deaths annually in the 1990s, with more than 6000 annual deaths in U.S. fisheries alone. J.A. 221, 518-519.

Based on its final EA, the Navy determined that its exercises from February 2007 through January 2009 would not have a significant impact on the environment and, accordingly, that NEPA did not require an EIS for those exercises. J.A. 112, 226-227. That conclusion paral-

lels the historical pattern in SOCAL. Over the last 40 years, the Navy has employed MFA-sonar systems using the same frequency and intensity (*i.e.*, the decibel level of the sonar source) as those used today and, since 1992, the number of training hours in SOCAL has declined. App. 268a-269a, 273a-274a; J.A. 119; E.R. 779. There have been no observed or documented incidents of injury or death to marine mammals resulting from MFA-sonar exposure in SOCAL in the past 40 years. Nor have there been any mass-stranding incidents or population-level effects in SOCAL attributable to MFA sonar. J.A. 104, 510-512, 541-542, 629; App. 274a-275a. Indeed, while records show that dozens of beaked and other whale strandings have been documented in SOCAL since 1982, not one of those stranding events was temporally correlated to any sonar use. J.A. 104; App. 256a-257a.

Prior to its preparation of the EA for the 14 exercises at issue in this case, the Navy had separately initiated development of an EIS in late 2006 to analyze the environmental impacts of *all* future Navy activities in SOCAL (including exercises involving MFA sonar). See 71 Fed. Reg. 76,639 (2006). The Navy released the draft EIS in April 2008, and the final EIS process is scheduled to be completed with a record of decision in January 2009. App. 235a-237a; U.S. Navy, *SOCAL EIS* <http://www.socalrangecomplexeis.com/PublicInvolvement.aspx>.

3. a. On March 22, 2007, respondents filed suit in the Central District of California, seeking a declaration that the series of 14 SOCAL exercises would violate NEPA, the CZMA, and the ESA, and to enjoin the Navy's use of MFA sonar in the exercises. E.R. 1157-1203 (complaint).

On August 7, 2007, the district court determined that respondents would not likely prevail on their ESA claim but would likely prevail on their NEPA and CZMA

claims, and it preliminarily enjoined all MFA-sonar use in the planned SOCAL exercises. App. 200a-218a. The court concluded that such sonar use would create a "near certainty" of irreparable harm to the environment, App. 217a, relying on the Navy EA's modeling of approximately 170,000 marine-mammal harassment incidents over the two-year exercise period, including 8000 instances of temporary hearing loss and what the court described as "466 cases of permanent injury to beaked and ziphiid whales." App. 204a, 206a-207a.

b. The Ninth Circuit stayed the preliminary injunction pending appeal, concluding that the district court "did not give serious consideration to the public interest" in national defense at a time of war. App. 180a-183a. Another panel of the Ninth Circuit then remanded the case on November 13, 2007, directing the district court "to narrow its injunction so as to provide mitigation conditions under which the Navy may conduct its training exercises." App. 174a.

c. On January 3, 2008, the district court issued a new preliminary injunction, App. 150a-170a, which it modified on January 10, 2008, App. 138a-149a. The court's order, as modified, directed the Navy, *inter alia*, to (1) cease sonar transmissions whenever a marine mammal is spotted within 2200 yards (1.25 miles) of any sonar source, and (2) reduce sonar power by six decibels (75%), whether or not a marine mammal is present, whenever the Navy detects "significant surface ducting," an environmental condition characterized by a mixed layer of constant water temperature extending at least 100 feet below the surface. App. 139a-140a, 142a-143a, 284a-285a, 297a.

The Chief of Naval Operations (CNO), who is responsible under 10 U.S.C. 5032 for organizing, training, and

equipping the Navy, determined that those restrictions unacceptably risk naval training, the timely deployment of strike groups, and national security. App. 341a-347a.[3] As the CNO and other high-ranking naval officers explained, the 2200-yard shut-down requirement would "crippl[e]" the Navy's ability to conduct realistic pre-deployment training and to assess a strike group's capabilities. App. 332a, 344a-346a, 353a-357a; see App. 269a-271a, 279a-285a. Similarly, a 75% power-down requirement in significant surface ducting conditions would "drastically reduce[]" the likelihood of detecting a submarine, App. 284a, and the corresponding reduction in detection range would prevent strike groups from conducting sonar operations to detect a submarine before it is positioned to attack. App. 279a-285a, 354a-356a. Training in significant surface ducting is "critical" because submariners exploit the condition in real-world military situations by hiding below the duct's thermocline, where the detection capability of even full-power sonar is reduced. App. 299a-300a, 333a.

Moreover, locating and tracking a modern diesel-electric submarine is an extraordinarily difficult task in the real world. Anti-submarine warfare is a high-stakes cat-and-mouse game that may span days and "require[] large teams of personnel working in shifts around the clock." App. 278a, 344a. Terminating or reducing sonar transmissions while attempting to locate and track a submarine, even for a relatively brief period, may allow the submarine to go undetected or escape. App. 355a-356a. Any experienced enemy submarine operator would seek to exploit such a gap in sonar transmissions to evade detec-

[3] Unredacted copies of the classified declarations of the CNO and other naval officers were provided to the Court in connection with the petition for a writ of certiorari.

tion, and no commanding officer would voluntarily surrender sonar contact on a submarine because "the stakes are too high." App. 355a. As a result, the loss of sonar-tracking capability during integrated air, surface, and subsurface training could negate the effectiveness of the entire exercise, unacceptably risking national security and the Navy's ability to deploy adequately trained strike groups. App. 345a, 354a-356a; see App. 314a-325a.

4. Petitioners appealed and sought a stay of the aspects of the injunction just described. Meanwhile, the district court's CZMA- and NEPA-based injunction prompted a series of emergency actions by the Executive pursuant to statutory and regulatory powers.

On January 15, 2008, the President exercised his express authority under the CZMA to exempt a federal activity from CZMA compliance if he finds it to be "in the paramount interest of the United States." 16 U.S.C. 1456(c)(1)(B); see App. 231a-232a. The President determined that "the COMPTUEX and JTFEX, including the use of mid-frequency active sonar in these exercises, are in the paramount interest of the United States." App. 232a. He further determined that, in light of the district court's injunction, an exemption was necessary "to ensure effective and timely training of the United States naval forces" because compliance would "undermine the Navy's ability to conduct realistic training exercises that are necessary to ensure * * * combat effectiveness." *Ibid.* The President accordingly issued the exemption to "enable the Navy to train effectively and to certify * * * strike groups for deployment" in support of activities "essential to national security." *Ibid.*

Contemporaneous with the President's action, the Council on Environmental Quality (CEQ) exercised its authority under 40 C.F.R. 1506.11 to authorize alterna-

tive arrangements for NEPA compliance in "emergency circumstances." App. 233a-249a. CEQ acted after extensive consultation with the Navy and NMFS and review of documentary materials. *Ibid.* Based on NMFS' determination that the Navy's SOCAL exercises were not expected to cause any "adverse population level effects for any * * * marine mammal populations," App. 255a, 258a, and on the imminent commencement of the next SOCAL exercise, CEQ concluded that "emergency circumstances" existed warranting "alternative arrangements for compliance with NEPA" through enhanced public-participation, research, and mitigation measures until the Navy's ongoing preparation of a SOCAL EIS is completed. App. 240a-248a. The Navy issued a decision accepting CEQ's alternative arrangements. J.A. 228-246.

5. The court of appeals remanded to permit the district court to consider the Executive's intervening actions. App. 7a. After partially staying its preliminary injunction to permit the January 2008 exercise to proceed, the district court denied petitioners' motion to vacate the injunction. App. 96a-137a. The district court questioned the constitutionality of the President's exemption under the CZMA because the court believed the exemption impermissibly rendered the court's earlier rulings advisory opinions. App. 126a-135a. Rather than decide that question, however, the court held that its preliminary injunction remained an appropriate remedy for a NEPA violation alone, explaining that CEQ's approval of alternative NEPA arrangements under Section 1506.11 was invalid because its injunction restricting strike-group training was not a "sudden, unanticipated event[]" giving rise to "emergency" circumstances under what the court regarded as "the plain language of the regulation." App. 97a, 112a-122a.

6. The court of appeals affirmed. App. 1a-90a. It likewise did not reach the validity of the President's actions under the CZMA, and it purported not to "adjudicate the meaning of the word 'emergency'" under CEQ's regulation. App. 4a n.3, 45a n.41. Instead, while recognizing that not all definitions of "emergency" supported the district court's conclusion, it held that the district court did not "abuse its discretion or rely on an erroneous legal premise in determining that CEQ's broad interpretation of 'emergency circumstances' was not authorized by 40 C.F.R. § 1506.11." App. 45a n.41, 56a. The court then affirmed the district court's conclusion that respondents had demonstrated a likelihood of success on the merits of their NEPA claim that an EIS was required. App. 60a-74a.

The court of appeals further held that the district court properly issued preliminary injunctive relief because respondents had shown a "possibility of irreparable injury" to marine mammals, App. 74a-77a, and because, in its view, the Navy failed to prove that the injunction would prevent it from effectively training or certifying its strike groups for deployment, App. 78a-87a. While noting that "there remains the possibility" the Navy would be unable to certify its strike groups because of the injunction, the court concluded the district court did not err in concluding that the balance of hardships tipped in favor of maintaining the injunction. App. 88a-89a.

At the same time, the court *sua sponte* granted a temporary partial stay of the injunction's 2200-yard mandatory shutdown and surface-ducting power-down requirements. App. 93a-95a. That stay will expire upon this Court's disposition of this case. App. 95a.

SUMMARY OF ARGUMENT

The Ninth Circuit erred in affirming a preliminary injunction that seriously jeopardizes the Navy's ability to train Sailors and Marines for wartime deployment during a time of ongoing hostilities. The decision poses substantial harm to national security; improperly overrides the collective judgments of Congress, the President, the Nation's top naval officers and the relevant agencies charged with protecting marine mammals (NMFS) and for interpreting NEPA (CEQ); and fundamentally misapplies settled principles governing preliminary injunctions.

1. The preliminary injunction must be set aside because it is based on an erroneous understanding of the obligations imposed by NEPA. CEQ determined that "emergency circumstances" exist in this case warranting alternative NEPA arrangements under 40 C.F.R. 1506.11 because the district court's preliminary injunction greatly risks the Navy's ability to train strike groups for deployments that are essential to national security and because there would be insufficient time to complete an EIS before such deployments must occur. CEQ's interpretation fully comports with the regulatory text and, thus, was entitled to deference.

As numerous dictionaries and judicial decisions attest, an "emergency" is a condition of urgent need requiring prompt action and, in this context, emergency circumstances exist because an urgent response was needed to avert significant impending harm to the public interest. While the district court concluded that the "plain language" of "emergency" limited the term to sudden, unanticipated events requiring immediate action, the court's understanding reflects only a subset of the word's more general meaning. Indeed, the Ninth Circuit itself recog-

nized that an "emergency" can be "a situation demanding immediate attention," App. 45a n.41, and that should have been the end of the matter. The prospect of substantial and imminent harm to the national security in this case presents a quintessential example of "emergency" circumstances. CEQ's interpretation is neither plainly erroneous nor plainly inconsistent with Section 1506.11 and, therefore, is entitled to controlling weight.

The Ninth Circuit's clearly erred in ruling that it did not have to "adjudicate the meaning of the word 'emergency'" and could, instead, defer to the district court's legal interpretation under an abuse-of-discretion standard. It is well established that appellate courts owe deference to an *agency*'s interpretation of its own regulation and do not defer to alternative constructions provided by trial courts. And, because the district court's preliminary injunction rested on the court's view that respondents had shown a likelihood of success on their NEPA claim, CEQ's approval of alternative NEPA arrangements removed the legal basis for that injunction.

2. Even apart from that legal error, the Ninth Circuit fundamentally misapplied established equitable principles in affirming the preliminary injunction.

a. Congress, in the MMPA, has determined that the public interest in military readiness outweighs the interest in protecting marine mammals where, as here, the Deputy Secretary of Defense, in consultation with the Secretary of Commerce, has exempted specific readiness activities. The district court's conclusion that a preliminary injunction was necessary to prevent potential harms to marine mammals from MFA sonar exercises failed to give effect to Congress's judgment that the public interest lies in *permitting* military activity like that at issue here notwithstanding any harm to marine mammals.

Where Congress has established the priority of interests in this manner, courts of equity lack authority to disregard that balance. Congress's declaration of public policy precluded the injunction in this case.

b. The court of appeals likewise erred in holding that preliminary injunctive relief may issue on the "mere possibility" of irreparable harm. Preliminary injunctions are an extraordinary and drastic remedy, which require substantial proof and a clear showing of a "likelihood" that irreparable injury will result in the absence of relief. The Ninth Circuit's standard of a "mere possibility" of such injury impermissibly dilutes that standard. Rebutting a plaintiff's assertion of a "mere possibility" of injury will rarely be feasible. Indeed, where, as here, considerable scientific uncertainty surrounds a plaintiffs' claimed harm, the Ninth Circuit's test is virtually meaningless.

The Ninth Circuit's application of that standard in this case demonstrates that its mere possibility standard is inconsistent with the extraordinary nature of preliminary equitable relief. The Navy has conducted MFA sonar exercises in SOCAL for over 40 years, during which there has been no evidence that its training has injured marine mammals. And, while data indicate that MFA sonar exposure may be a contributing cause in stranding events in locations outside of SOCAL, the Navy's training will avoid the combination of circumstances that have characterized such incidents. NFMS accordingly determined that the Navy's exercises were not expected to result in "adverse population level effects for any * * * marine mammal populations" in SOCAL. App. 258a. The Navy's EA likewise predicts no permanent harm to marine mammals caused by MFA sonar.

Indeed, to establish a likelihood of irreparable harm to their members, the organizational respondents would

have to have show permanent or long-lasting harm to a species as a whole in order to materially diminish their ability to observe such mammals. No such showing was made.

c. The Ninth Circuit's errors extend to its approach to balancing the hardships of the parties and the public interest. In this case, the balance is clear. The harm claimed by respondents is a generalized assertion of an unquantified impact to their members' aesthetic enjoyment of marine mammals. In contrast, the immediate and substantial adverse effects of the Ninth Circuit's decision on national security are plain. The President—the Commander in Chief—determined that the injunctive order undermines the Navy's ability "to conduct realistic training exercises that are necessary to ensure combat effectiveness," "essential to national security," and in "the paramount interest of the United States." App. 232a. The Chief of Naval Operations had previously determined that the injunction creates an unacceptable risk to the Navy's ability to train for essential overseas operations at a time when the United States is engaged in war in two countries. The Ninth Circuit failed to provide sufficient deference to the military judgments regarding the degree of risk to essential military training, and its analysis made no attempt to weigh the respective magnitude of harms to the parties or the public interest. The court of appeals' review of the preliminary injunction in this case is fundamentally inconsistent with traditional principles of equity and should be reversed.

ARGUMENT

A "preliminary injunction is an 'extraordinary and drastic remedy.'" *Munaf* v. *Geren*, 128 S. Ct. 2207, 2219 (2008) (citation omitted). Such relief is warranted only where the party seeking the injunction makes a clear showing that "he is likely to prevail on the merits" and that "he will suffer irreparable injury" during litigation without an injunction. *Doran* v. *Salem Inn, Inc.*, 422 U.S. 922, 931 (1975); see *Munaf*, 128 S. Ct. at 2219; *Mazurek* v. *Armstrong*, 520 U.S. 968, 972 (1997) (per curiam) ("clear showing" required). Moreover, a preliminary injunction is appropriate only when, on balance, the parties' competing claims of injury and the public interest also call for relief. See *Weinberger* v. *Romero-Barcelo*, 456 U.S. 305, 312 (1982); *Amoco Prod. Co.* v. *Village of Gambell*, 480 U.S. 531, 546 n.12 (1987); *Yakus* v. *United States*, 321 U.S. 414, 440-441 (1944). The Ninth Circuit erred both in its ruling on the merits of respondent's NEPA claim and in its application of well-settled principles governing and limiting the award of equitable relief. Those errors, whether considered separately or in combination, require reversal of the judgment below.

I. THE COUNCIL ON ENVIRONMENTAL QUALITY PERMISSIBLY AUTHORIZED ALTERNATIVE NEPA ARRANGEMENTS UNDER 40 C.F.R. 1506.11 TO ADDRESS "EMERGENCY CIRCUMSTANCES" IN THIS CASE

The Ninth Circuit erred in affirming the preliminary injunction based on the district court's disagreement with CEQ's determination that "emergency circumstances" warranted alternative NEPA arrangements under Section 1506.11. CEQ's reasonable construction of its own regulation fully comports with the regulation's text and should have been given controlling weight.

A. CEQ's Interpretation Of Section 1506.11 Comports With The Plain Meaning Of "Emergency"

1. NEPA is a procedural statute that directs federal agencies—"to the fullest extent possible," but also "consistent with other essential considerations of national policy"—to prepare a "detailed statement" on "the environmental impact" of proposed "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. 4331(b), 4332(2)(C); cf. *Department of Transp.* v. *Public Citizen*, 541 U.S. 752, 756 (2004) (citing *Robertson* v. *Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989)). Congress, however, did not specify in NEPA what constitutes a "detailed statement." Instead, CEQ was "established by NEPA with authority to issue regulations interpreting it," and CEQ has exercised that authority to promulgate regulations identifying the steps that federal agencies should follow in complying with NEPA. *Id.* at 757; see 40 C.F.R. 1500.3; see also 40 C.F.R. 1501.4 and Pt. 1502. CEQ's regulations are entitled to "substantial deference." *Methow Valley*, 490 U.S. at 355-356.

Consistent with the "rule of reason" "inherent in NEPA and its implementing regulations," *Public Citizen*, 541 U.S. at 767, CEQ's regulations have for 30 years authorized agencies to use "alternative arrangements" for NEPA compliance when "emergency circumstances make it necessary to take an action" having significant environmental impact without observing the normal procedures in NEPA's implementing regulations. 40 C.F.R. 1506.11. Respondents have not contested that CEQ may properly authorize "alternative arrangements for compliance with NEPA under genuine emergency circum-

stances." App. 42a.[4] They instead have "limited [their] challenge to CEQ's application of [Section 1506.11] to the facts of this case." *Ibid.* That challenge fails.

2. CEQ determined that "emergency circumstances" exist in this case in light of the significant risk that the Navy would be unable to effectively prepare strike groups essential to national security under the district court's January 2008 injunction; the proximity of a January 2008 exercise, the failure of which would "have immediate ramifications for Navy deployments around the world;" and the lack of "sufficient time to complete an EIS" before future strike groups must be properly trained for worldwide deployment. App. 238a-240a. CEQ's interpretation of the term "emergency circumstances" on which that determination rests must be given "controlling weight unless it is plainly erroneous or inconsistent with the regulation" itself. *Thomas Jefferson Univ.* v. *Shalala*, 512 U.S. 504, 512 (1994) (citation omitted); accord *Auer* v. *Robbins*, 519 U.S. 452, 461 (1997). Because CEQ's interpretation comports with the text of Section 1506.11, it is neither "plainly erroneous" nor "plainly inconsistent with the wording of the regulation[]," *United States* v. *Larionoff*, 431 U.S. 864, 872-873

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[4] Indeed, respondent NRDC explained to Congress when Congress was considering changes to environmental statutes that "NEPA itself allows for emergency action prior to completion of environmental documentation in consultation with the CEQ." *Federal Forest Management: Hearings Before the Subcomm. on Forests and Pub. Land Mgmt. of the Senate Comm. on Energy and Natural Res.*, 104th Cong., 1st Sess. 219, 222 & n.15 (1995) (citing 40 C.F.R. 1506.11); cf. 137 Cong. Rec. 7007-7009 (1991) (removing NEPA exception from a bill because "existing CEQ regulations adequately address the need for special NEPA procedures when emergency circumstances exist" and listing 21 alternative arrangements under Section 1506.11 from 1980 to 1991).

(1977), and it is therefore entitled to be given effect by this Court.

The preliminary injunction at issue rests on the district court's view that—under "the plain language of the regulation and the limited indicia of the agency's original intent," App. 42a, 112a—only "sudden unanticipated event[s]" can give rise to an "emergency." App. 43a-45a. The court further held that no such "emergency" resulted from its January 2008 order enjoining the Navy's exercises because the injunction was an "entirely predictable" and "foreseeable" result of the Navy's failure to complete an EIS "given the parties' litigation history." App. 45a-46a; see App. 43a-50a. That ruling, sustained by the Ninth Circuit, is untenable.

3. While "emergency" certainly encompasses "unforeseen" or "unexpected" circumstances requiring immediate action, the term is more broadly defined as a "condition of urgent need for action or assistance." *The American Heritage Dictionary of the English Language* 602 (3d ed. 1992) (def. 2). That definition is reflected in numerous dictionaries that confirm that an "emergency" arises from the presence of urgent circumstances demanding prompt action and that, while emergencies often may be unforeseen or unexpected, such emergencies reflect only a subset of the term's broader meaning.[5] Com-

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[5] See, *e.g.*, *The Random House Dictionary of the English Language* 636 (2d ed. 1987) ("a situation demanding immediate action," which is "usually unexpected;" "exigency"); *Webster's New Collegiate Dictionary* 368 (1981) (def. 2: "a pressing need"); *Black's Law Dictionary* 469 (5th ed. 1979) (listing multiple definitions, including "exigency" and "pressing necessity"); see also, *e.g.*, *The Oxford American Dictionary and Language Guide* 313 (1999) ("a sudden state of danger, conflict, etc., requiring immediate action"); *The Living Webster Encyclopedic Dictionary of the English Language* 321 (1971) ("A sudden, usu. unexpected, occasion or combination of events calling for immediate

mon usage verifies that understanding. If a cardiac patient fails to take his heart medicine, for instance, the resulting medical crisis is no less an "emergency" requiring immediate attention simply because it was foreseeable or the patient may have contributed to its cause.

Several courts of appeals have similarly recognized that "some genuine emergencies can be anticipated well in advance." *Pleasantview Nursing Home, Inc.* v. *NLRB*, 351 F.3d 747, 756 n.4 (6th Cir. 2003). For example, courts have recognized that a strike by air traffic controllers may give rise to an "operational emergency" even if the strike was "reasonably foreseeable" and might have been prevented. See *Letenyei* v. *Department of Transp.*, 735 F.2d 528, 531-532 (Fed. Cir. 1984) (en banc); see also 29 U.S.C. 176, 178 ("national emergency" exists where strike would "imperil the national health or safety"); *United Steelworkers* v. *United States*, 372 F.2d 922, 924 (D.C. Cir. 1966) (per curiam) ("any strike which affects [the military aircraft engine] industry" to "the jeopardy of our national safety" falls within "emergency provisions of Taft-Hartley [Act]").

The district court's order demanding an EIS before vital military exercises can effectively proceed constitutes an emergency. As the Fourth Circuit recognized, "it would be unreasonable to restrict the definition of 'emergency' to those situations in which the underlying facts are sudden and unforeseen" because, even where a government agency is fully aware of the factors leading to a predictable crisis, the circumstances that ultimately result can "constitut[e] an 'emergency'" if they "requir[e] immediate and drastic action." *United States* v. *South-*

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action."); *Webster's Third New International Dictionary of the English Language* 741 (1967) (def. 1c: "a usu. distressing event or condition that can often be anticipated or prepared for but seldom exactly foreseen").

ern Ry., 380 F.2d 49, 51 n.4, 55 n.17 (1967). Simply put, an "emergency situation" exists when an immediate response is needed to avert a significant impending harm to the public interest, and, for that reason, "[a]n assessment of blame regarding [the cause of] the predicament * * * is quite frankly irrelevant to a determination of whether [the government] is faced with an 'emergency situation.'" *Yonkers Racing Corp.* v. *City of Yonkers*, 858 F.2d 855, 866 (2d Cir. 1988) (finding emergency caused by city's "own intransigence"), cert. denied, 489 U.S. 1077 (1989).

4. That conclusion is especially warranted in this case. At the same time that CEQ approved the alternative arrangements, the President determined that the Navy's training exercises, including the use of MFA sonar, are "in the paramount interest of the United States" and "essential to national security." See pp. 14-15, *supra*. Fulfillment of the mission the President found to be essential should not be frustrated by what the district court found to be a prior procedural error by the Navy under NEPA—especially since the Navy and NMFS had comprehensively studied the impact of MFA sonar on marine mammals and the Navy had prepared an extensive EA in seeking to comply with NEPA. The need for the Navy to carry out that mission in the wake of its Commander-in-Chief's conclusion that it is critically important to the Nation's security constitutes a genuine, intervening emergency. And even apart from the customary deference that CEQ's interpretation is owed, a court should be particularly reluctant to disregard the President's determination concerning the urgency of the training exercises at issue.

B. The Ninth Circuit Erred In Deferring To The District Court's Reading Of Section 1506.11

1. The Ninth Circuit did not itself embrace the district court's restrictive reading of "emergency," and it even acknowledged that an "emergency" can be "a situation demanding immediate attention." App. 45a n.41. Notwithstanding that acknowledgment—which should have been dispositive under *Auer*—the panel purported not to "adjudicate the meaning of the word 'emergency' here." *Ibid.* It instead sustained the district court's interpretation on the ground that the district court's analysis (though perhaps ultimately incorrect) did not rely on erroneous "legal principles" or reflect an abuse of discretion. *Ibid.* That approach to deference is backwards. Rather than accord deference to *CEQ's* authoritative interpretation, the Ninth Circuit erroneously deferred to the *district court's* contrary reading—and did so under an abuse-of-discretion standard, thereby abdicating its own responsibility to review that legal issue de novo.

The fact that the Ninth Circuit was reviewing a preliminary injunction does not support its approach. While preliminary injunctions are in some respects reviewed for abuse of discretion, a lower court's legal rulings, like the one at issue here, are reviewed de novo. *Gonzales* v. *O Centro Espirita Beneficiente Uniao do Vegetal*, 546 U.S. 418, 428 (2006); cf. *Munaf*, 128 S. Ct. at 2219-2220. Appellate courts therefore must determine afresh whether an agency's statutory and regulatory interpretations are entitled to deference. See, *e.g.*, *Hoult* v. *Hoult*, 373 F.3d 47, 53-55 (1st Cir.) (*Chevron* deference), cert. denied, 543 U.S. 1002 (2004); *Serono Labs., Inc.* v. *Shalala*, 158 F.3d 1313, 1318-1322 (D.C. Cir. 1998) (same). That practice reflects the general rule that a district court's "decision to grant a preliminary injunction that is premised on an

error of law is entitled to no deference and must be reversed." *Brotherhood of Maint. of Way Employes Div.* v. *Union Pac. R.R.*, 460 F.3d 1277, 1282 (10th Cir. 2006) (internal quotation marks omitted); accord *Burlington N. & Santa Fe Ry.* v. *Brotherhood of Locomotive Eng'rs*, 367 F.3d 675, 678 (7th Cir. 2004); *Delta Air Lines, Inc.* v. *ALPA*, 238 F.3d 1300, 1308 (11th Cir.), cert. denied, 532 U.S. 1019 (2001).

The Ninth Circuit's resort to abuse-of-discretion review on a question of law also is inconsistent with this Court's recognition that a preliminary injunction is an "extraordinary and drastic remedy," *Munaf*, 128 S. Ct. at 2219 (citation omitted), particularly where, as here, the Ninth Circuit acknowledged that CEQ's interpretation of "emergency" comports with a dictionary definition for the term. App. 45a n.41. Such deference effectively permits the district court to "err[] in deciding *itself* that no emergency existed" under Section 1506.11 when it is CEQ's interpretation of that regulation, not the district court's, that is "entitled to substantial deference." *National Audubon Soc'y* v. *Hester*, 801 F.2d 405, 408 n.3 (D.C. Cir. 1986) (per curiam) (reversing preliminary injunction in suit challenging emergency arrangements under 40 C.F.R. 1506.11).

2. The Ninth Circuit's observation that the district court's interpretation of Section 1506.11 found "support" in the regulation's drafting history, a prior application of Section 1506.11, and other court decisions addressing previous emergency NEPA arrangements (App. 46a-49a) suffers from a similar flaw. Because courts "must give substantial deference to an *agency's* interpretation of its own regulations," an appellate court's "task is not to decide which among several competing interpretations best serves the regulatory purpose," *Thomas Jefferson Univ.*,

512 U.S. at 512 (emphasis added), or to decide whether a district court's contrary interpretation finds some "support." The relevant question under *Auer* is whether the "agency's interpretation must be given 'controlling weight'" because it is not "plainly erroneous or inconsistent with the regulation." *Ibid.* CEQ's interpretation of Section 1506.11 meets that standard.

Nothing in the regulation's history contradicts CEQ's interpretation here.[6] Section 1506.11's limited drafting history shows that CEQ intended that federal agencies consult CEQ regarding the need for emergency action "as soon as feasible," but that the regulation provides flexibility to allow an agency to take such action even without advance consultation when an urgent need to act makes prior CEQ authorization "impractical." 43 Fed. Reg. 55,988 (1978). The court of appeals found no abuse of discretion in the district court's conclusion that this history "supports a narrow, rather than a broad interpretation of the phrase 'emergency circumstances'" and "reflects CEQ's intent to use the regulation to accommodate 'sudden unanticipated events' but not more predictable events such as provisionally unfavorable litigation results." App. 47a. But CEQ's decision to allow agencies to act on their own if the situation is so urgent that even advance consultation with CEQ is "impractical" does not speak to the question here, where the Navy *did* consult with CEQ, which approved alternative arrangements. And although the unforeseen or unexpected nature of the circumstances might be one reason why consultation may be impractical in a particular case, nothing in the regula-

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[6] Even where an agency modifies its interpretation of a regulation, "the change in interpretation presents no separate ground for disregarding the [agency's] present interpretation." See *Long Island Care at Home, Ltd.* v. *Coke*, 127 S. Ct. 2339, 2349 (2007).

tory history suggests that CEQ believed that was the *only* situation an "emergency" could arise.

Similarly, nothing in CEQ's determination here is inconsistent with its authorization of alternative arrangements for NEPA compliance in the wake of Hurricane Katrina because there was "[in]sufficient time to follow the regular [EIS] process" to evaluate the environmental impact of critical-infrastructure reconstruction grants. See App. 46a (quoting 71 Fed. Reg. 14,713 (2006)). The "urgent national security reasons" (App. 239a) for proceeding with military training determined by the President to be "essential to national security" (App. 232a) likewise fall within any reasonable conception of "emergency" circumstances where there is insufficient time to follow the regular EIS process.

The judicial decisions cited by the Ninth Circuit as supporting the district court's injunction, App. 48a-49a, likewise fail to undermine CEQ's reading. For instance, in *Miccosukee Tribe of Indians* v. *United States*, 509 F. Supp. 2d 1288 (S.D. Fla. 2007), the court discussed CEQ's alternative arrangements allowing the Army Corps of Engineers to "deviate[] from its [own test] operations," which had raised water levels and threatened the survival of an endangered sparrow species. *Id.* at 1290. That situation was undoubtedly a "creature of [the agency's] own making," App. 43a, and may have been foreseeable, but emergency circumstances nevertheless existed because of the need for prompt action.

Similarly, *Valley Citizens* upheld CEQ's emergency-circumstances determination where, after the first Gulf War had ended but in light of the "hostile and unpredictable nature of the Persian Gulf region," 24-hour cargo-flight operations out of Westover Air Force Base were necessary under a "complex, global flight schedule" for

transporting equipment and personnel "essential to the maintenance of military readiness at home and abroad." *Valley Citizens for a Safe Env't* v. *Vest*, Civ. A. No. 91-30077, 1991 WL 330963, at *5 (D. Mass. May 6, 1991). *Valley Citizens*, like *Miccosukee Tribe*, reinforces CEQ's longstanding rationale for finding "emergency" circumstances: an urgent need for action to avoid risking significant damage to essential considerations of national policy in circumstances where there is not time to prepare the sort of NEPA documents that might otherwise be called for under CEQ's regulations. See also, *e.g.*, *National Audubon Soc'y*, 801 F.2d at 406, 408 n.3 (authorizing emergency action to take into captivity the six remaining wild condors because of decline in condor population); *Crosby* v. *Young*, 512 F. Supp. 1363, 1374-1375, 1380, 1386-1387 & n.5 (E.D. Mich. 1981) (authorizing federal loan guarantees without an EIS to permit Detroit's acquisition of property needed to mitigate severe economic impact of forthcoming plant closures).

Significantly, neither CEQ's prior determinations under Section 1506.11 nor any court decision reviewing those determinations suggests that "emergency circumstances" will not arise where, after an agency prepares a robust EA concluding that a full EIS is not required, a district court (preliminarily) disagrees and imposes injunctive restrictions on essential agency action. The approach followed by the courts below, however, would effectively *penalize the public* for an agency's arguably mistaken evaluation of NEPA's procedural requirements—even after the agency has comprehensively evaluated the specific environmental impact—by judicially deeming that the dire consequences flowing from inaction cannot constitute an "emergency" as a matter of law. That powerfully counterintuitive reading of Section

1506.11 is not compelled by the regulation's text. And because it is CEQ's interpretation—not the district court's—that is "controlling unless 'plainly erroneous or inconsistent with the regulation,'" *Auer*, 519 U.S. at 461, respondents have not demonstrated a likelihood of success on the merits.

3. The gravity of the Ninth Circuit's error is underscored by its view that it was permissible for the district court to disregard CEQ's "emergency" determination because "the Navy ha[d] been on notice of its possible legal obligations" to prepare an EIS and purportedly delayed until January 10, 2008, to seek emergency relief. App. 45a-46a. As explained, the existence of "emergency circumstances" turns on the urgent need for prompt action, not on concepts of notice or comparative fault. NEPA is to be implemented "consistent with other essential considerations of national policy," 42 U.S.C. 4331(b), and those "essential considerations" are not to be sacrificed based on a court's own notion of notice and fault.

Moreover, the Ninth Circuit's assessment of the Navy's actions was flawed even on its own terms. The Navy completed a robust EA and concluded in good faith that no EIS would be necessary for the 14 exercises scheduled to occur prior to the completion of the comprehensive SOCAL EIS in January 2009. While the district court found that the Navy's conclusion was likely wrong, it was (at a minimum) reasonable for the Navy to believe its conclusion was sound. See *United States Postal Serv.* v. *Gregory*, 534 U.S. 1, 10 (2001) ("a presumption of regularity attaches to the actions of Government agencies"). No emergency arose until the court ruled to the contrary and entered an injunction jeopardizing the Navy's ability to train strike groups for deployment.

The initial August 7, 2007 injunction was promptly stayed on appeal sufficiently before the Navy's next exercise was to commence. App. 175a-194a. Then, when the Ninth Circuit subsequently remanded for entry of a narrower injunction, it noted that the Navy had previously used mitigation measures compatible with its training needs and directed the district court to issue an injunction "under which the Navy may conduct its training exercises." App. 173a-174a. It was not apparent until the district court issued its January 3, 2008 injunction on remand that the court's restrictions—which go well beyond the mitigation measures employed by the Navy—would significantly impede training exercises deemed essential to national security.

The President then immediately determined, in issuing an exemption from the CZMA, that the injunctive order "would undermine the Navy's ability to conduct realistic training exercises that are [both] necessary to ensure * * * combat effectiveness" and "essential to national security," App. 232a, and the CNO determined that the court's restrictions posed an "unacceptable risk" to the Navy's ability to train for overseas deployment necessary for national security. App. 81a, 343a-345a. The prospect of the substantial and imminent harm to the public interest—and, indeed, the Nation's security—that the President identified represents a quintessential example of "emergency circumstances" warranting alternative arrangements for complying with NEPA. The Ninth Circuit's contrary conclusion alone warrants reversal.

II. THE DISTRICT COURT'S PRELIMINARY INJUNCTION IS INCONSISTENT WITH ESTABLISHED PRINCIPLES GOVERNING INJUNCTIVE RELIEF

Even if the President's and CEQ's emergency actions had not eliminated the legal basis for respondents' NEPA claim, the preliminary injunctive relief in this case would nevertheless have been improper. First, Congress determined in the MMPA that the equitable balance between marine mammal protection and military activity necessary for national defense must be struck in favor of military readiness when the Secretary of Defense, after conferring with the Secretary of Commerce, so determines. The district court lacked discretion to disregard that congressional ordering of priorities. Second, even if respondents' aesthetic enjoyment of marine mammals could properly have been weighed against the essential military activity in this case, the preliminary injunction was improperly issued based on the "mere possibility" of irreparable harm to that aesthetic interest. And third, even if the mere possibility of such harm might be considered, the district court's balancing of the interests of the parties and the public dramatically diverges from established principles and lacks support in the record.

A. The District Court Lacked Discretion To Grant Injunctive Relief Based On Its Own Assessment of Harm to Marine Mammals

A court's equitable discretion to provide injunctive relief normally turns on a balancing of the relative hardships of the parties and the public interest once the movant has shown a likelihood of success on the merits. *Romero-Barcelo*, 456 U.S. at 312; see *Gambell*, 480 U.S. at 546 n.12. However, when Congress has itself "decided the order of priorities in a given area," a court of equity

must follow the "balance that Congress has struck" and lacks discretion to strike a different balance. *United States* v. *Oakland Cannabis Buyers' Coop.*, 532 U.S. 483, 497 (2001) (quoting *TVA* v. *Hill*, 437 U.S. 153, 194 (1978)). The district court's conclusion that a preliminary injunction was necessary to prevent potential harms to marine mammals improperly "ignore[d] the judgment of Congress, deliberately expressed in" the MMPA, that the public interest lies in *permitting* military activity like that at issue here notwithstanding any potential to harm marine mammals. See *Virginian Ry.* v. *System Fed'n No. 40*, 300 U.S. 515, 551-552 (1937). That congressional "declaration of public interest and policy" is dispositive. *Id.* at 552.

The MMPA's prohibition on harassing, injuring, or killing marine mammals reflects Congress's judgment that the public interest normally lies in protecting such mammals to preserve their aesthetic, recreational, and economic value for the public. 16 U.S.C. 1361(6), 1362(13) and (18), 1371(a), 1372(a)(1) (2000 & Supp. V 2005). The Navy, whose members are instilled with great respect for the sea and sea life, certainly supports that general policy judgment. Congress, however, also has determined that national security can trump marine mammal protection and, indeed, has authorized the Secretary of Defense to exempt from the MMPA military activity that is "necessary for national defense." 16 U.S.C. 1371(f)(1) (Supp. V 2005). To invoke that authority, the Secretary of Defense must confer with the Secretary of Commerce (or Interior), *ibid.*, and submit notice of and the reasons for each such exemption to Congress. 16 U.S.C. 1371(f)(4) (Supp. V 2005). The MMPA thus vests the responsibility for balancing marine mammal protection against military preparedness squarely with the political Branches and

provides mechanisms for Congress's continuing oversight of the Secretary's exemption authority.

That statutory authorization, in Congress's judgment, "properly balances the equities associated with military readiness and maritime species protection" while assuring involvement by the agency charged with protecting marine mammals. See H.R. Conf. Rep. No. 354, 108th Cong., 1st Sess. 669 (2003) (Conf. Rep.). "Courts of equity cannot, in their discretion, reject th[at] balance." *Oakland Cannabis*, 532 U.S. at 497; see *Hill*, 437 U.S. at 194 ("[I]t is * * * the exclusive province of the Congress" to "formulate legislative policies and * * * establish their relative priority for the Nation."). Because the Deputy Secretary of Defense properly exempted the Navy's sonar activities from the MMPA, App. 219a-220a, subject to mitigation measures developed in consultation with NMFS, the courts below exceeded their authority by prohibiting MFA sonar use expressly *authorized* pursuant to the statutory exemption.

Indeed, Congress enacted Section 1371(f)'s exemption authority in part in reaction to respondent NRDC's prior success in obtaining a preliminary injunction against the Navy's use of low-frequency active (LFA) sonar. See Conf. Rep. 669 (discussing *NRDC* v. *Evans*, 232 F. Supp. 2d 1003 (N.D. Cal. 2002)). The court in *Evans* had "consider[ed] the public interests both in national security and in protecting marine mammals" and—like the courts below—issued what it regarded as "a carefully tailored preliminary injunction" to "permit[] the use of LFA sonar for testing and training" while imposing substantive restrictions "to reduce the risk to marine mammals and endangered species." *Evans*, 232 F. Supp. 2d at 1013, 1051-1055. Congress's enactment of Section 1371(f) conclusively rejects such judicial balanc-

ing of interests where, as here, that section has been invoked to authorize military activity notwithstanding any potential harm to marine mammals.

NEPA is, of course, a procedural statute. *Methow Valley*, 490 U.S. at 350, 353 & n.16. It neither "mandate[s] particular results" nor imposes any "requirement [to] mitigat[e]" adverse environmental impacts. *Ibid.* And the asserted substantive harms to marine mammals on which the district court sought to justify a preliminary injunction under NEPA are precisely those that Congress has determined must give way to considered judgments about national security.

Moreover, an agency's compliance with NEPA is reviewed under the APA, which contemplates that, even where relief is warranted, either declaratory *or* injunctive relief may be appropriate, 5 U.S.C. 703, and expressly preserves the "power or duty of the court to * * * deny relief on any * * * appropriate legal or equitable ground," 5 U.S.C. 702. Cf. *Ramirez de Arellano* v. *Weinberger*, 745 F.2d 1500, 1561 (D.C. Cir. 1984) (en banc) (Scalia, J., dissenting) (separation of powers problems associated with judicial interference with military training exercises abroad "make this virtually a textbook case for refusing * * * discretionary relief"), vacated on other grounds, 471 U.S. 1113 (1985); *Sanchez-Espinoza* v. *Reagan*, 770 F.2d 202, 208 (D.C. Cir. 1985) (Scalia, J.). Because Congress and the Secretary struck the controlling balance between military readiness and protection of marine mammals—and because the injunction in any event interferes in critical respects with training exercises determined by the President and the Chief of Naval Operations to be essential to national security—those provisions of the APA underscore the impropriety of the injunction affirmed by the Ninth Circuit.

B. The "Mere Possibility" Of Irreparable Harm Cannot Support The Preliminary Injunction

The Ninth Circuit further erred in holding that respondents need only show a "mere possibility" of irreparable harm to justify such relief, rejecting the proposition that a "significant threat of irreparable injury" must be shown. See App. 76a-77a (quoting *Earth Island Inst.* v. *USFS*, 442 F.3d 1147, 1159 (9th Cir. 2006), cert. denied, 127 S. Ct. 1829 (2007)). The Ninth Circuit's "mere possibility" standard expands the courts' equitable powers well beyond their traditional moorings and cannot be reconciled with the "stringent" standard this Court has laid down for preliminary injunctive relief. *Doran*, 422 U.S. at 931; see *Munaf*, 128 S. Ct. at 2219.

1. a. This "Court has repeatedly held that the basis for injunctive relief in the federal courts has always been irreparable injury and the inadequacy of legal remedies." *Romero-Barcelo*, 456 U.S. at 312 (citing, among others, *Sampson* v. *Murray*, 415 U.S. 61, 88 (1974)). "The traditional standard for granting a preliminary injunction requires the plaintiff to show that in the absence of its issuance *he will suffer* irreparable injury." *Doran*, 422 U.S. at 931 (emphasis added). While statistical certainty is unnecessary, a "likelihood of irreparable injury" is. *Ashcroft* v. *ACLU*, 542 U.S. 656, 666 (2004); see *City of Los Angeles* v. *Lyons*, 461 U.S. 95, 103 (1983) ("likelihood of substantial and immediate irreparable injury") (quoting *O'Shea* v. *Littleton*, 414 U.S. 488, 499, 502 (1974)); see also *Village of Gambell*, 480 U.S. at 545, 546 n.12; *Grupo Mexicano de Desarrollo, S.A.* v. *Alliance Bond Fund, Inc.*, 527 U.S. 308, 340 (1999) (Ginsburg, J., concurring in part and dissenting) (citing *Doran*); *Granny Goose Foods, Inc.* v. *Brotherhood of Teamsters*, 415 U.S. 423,

441 (1974); *eBay Inc.* v. *MercExch., L.L.C.*, 547 U.S. 388, 391 (2006) (permanent injunction).

The application of equitable power before a court fully adjudicates a case renders a "preliminary injunction * * * an 'extraordinary and drastic remedy,'" *Munaf*, 128 S. Ct. at 2219 (citation omitted); *Mazurek*, 520 U.S. at 972, whose sole function is "to preserve the relative positions of the parties until a trial on the merits can be held." *University of Tex.* v. *Camenisch*, 451 U.S. 390, 395 (1981). A party requesting it must therefore proffer "substantial proof" and make a "clear showing" that such extraordinary relief is necessary. *Mazurek*, 520 U.S. at 972.

Requiring only a "mere possibility" of irreparable injury fundamentally alters—and diminishes—the threshold requirement that a clear showing be made of a "likelihood" of irreparable injury. "Likelihood sets, of course, a higher standard than 'possibility,'" *JSG Trading Corp.* v. *Tray-Wrap, Inc.*, 917 F.2d 75, 79 (2d Cir. 1990)—not to mention "mere possibility"—of irreparable harm. The Ninth Circuit adoption of that standard effectively shifts to the Navy the burden of proving that irreparable injury would *not* occur in the absence of injunctive relief. Rebutting a plaintiff's assertion of a "mere possibility" of harm is rarely feasible, especially where evidence shedding light on actual environmental harm is scant and there is considerable scientific uncertainty. Indeed, to grant relief based on "a mere 'possibility' of [harm] would render the test for a preliminary injunction virtually meaningless." *In re DeLorean Motor Co.*, 755 F.2d 1223, 1229 (6th Cir. 1985).

b. This case starkly illustrates the flaws in resting an injunction on mere possibilities of harm. The Navy's 40-year history of conducting MFA-sonar exercises in

SOCAL using the same frequency and intensity as that used today, and the absence of any demonstrated incidents of sonar-related injury to marine mammals (see p. 11, *supra*), were far more than sufficient to foreclose injunctive relief.[7] Indeed, the court of appeals itself acknowledged that "the record contains *no evidence* that marine mammals have been harmed by the use of MFA sonar in [SOCAL]." App. 76a (emphasis added). But the

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[7] Elsewhere in its opinion, the Ninth Circuit expressed the view that the record was "unclear" on whether the Navy now utilizes MFA sonar in SOCAL at a similar frequency and intensity because the Navy did not provide detailed data underlying Rear Admiral Bird's explanation of that historical trend. App. 23a-25a. The court even went so far as to suggest that the Admiral's explanation was unreliable because, in its view, "the record suggests that with the [Navy's] new class of destroyers the average MFA sonar transmission may have increased in power level and changed in frequency." App. 24a. That is incorrect.

The panel erroneously concluded that the record "suggests" that the average power output of Navy sonars recently increased because it mistakenly assumed that the SQS-53 active sonar system on the Arleigh Burke-class destroyer "replaced" the lower-power SQS-56 system found on Perry-class frigates. App. 24a (citing App. 273a and E.R. 778-779); cf. E.R. 779 (noting that SQS-53 and SQS-56 sonars operate at approximately 235 and 223 dB, respectively). Destroyers and frigates are *different* types of warships with different (though often overlapping) missions. Cf. J.A. 139-140; ER 777. The Navy's Arleigh Burke-class destroyer replaced older classes of destroyers (not frigates) that employed either the SQS-53 or SQS/SQQ-23 active sonar systems. *Jane's Fighting Ships* 727-730 (1989-1990 ed.) (describing Navy's Kidd-, Spruance-, Adams-, and Farragut/Coontz-class destroyers); see Norman Friedman, *The Naval Inst. Guide to World Weapons Systems* 626 (1991) (typical source level for SQS-23 was 244 dB). Similarly, the lower-power SQS-56 sonar now used on the Navy's Perry-class frigates replaced the higher power SQS-26 sonars on predecessor vessels. See *Jane's Fighting Ships* 732-736 ("[a]ll" U.S. Navy frigates in 1990 "except the 'Perry' class have the large SQS 26 sonar;" describing now-retired Knox-, Garcia/Glover-, and Bronstein-class frigates); App. 269a, 273a.

court sought to minimize that critical defect in respondents' case on the ground that such harm would be "difficult to detect" and by observing that a consensus exists that "MFA sonar *may* cause injury and death to marine mammals." *Ibid.* (emphasis added). Even if the Ninth Circuit were correct on those points, the *absence* of evidence of harm over such a long period of time should have cut decidedly against any injunction, because it is respondents who bear the burden of submitting "substantial proof" and making a "clear showing" (*Mazurek*, 520 U.S. at 972) of irreparable injury.

Rather than require such a showing, the Ninth Circuit simply dismissed the conclusion of NMFS—the expert agency responsible for implementing MMPA protections for the marine mammal species at issue here —that MFA-sonar use in the Navy's exercises would not likely adversely affect any marine mammal populations. App. 65a n.53. NMFS evaluated the existing scientific evidence and found that the Navy's use of MFA sonar is "likely to elicit temporary behavioral responses from marine mammals" in SOCAL, such as "alerting responses," "temporary movement away from sound sources," and "temporary cessation of feeding or breeding activities," but that the Navy's exercises were "not expect[ed] * * * to result in adverse population level effects for *any* of these marine mammal populations." App. 258a (emphasis added).

NMFS acknowledged that MFA-sonar use has been "implicated as a contributing factor" in a number of mass stranding events in other locations and that some "species of beaked whales (none of which is listed under the Endangered Species Act)" appear to be more susceptible to injury. App. 255a, 257a. However, the available data also show that marine mammals—including beaked

whales in SOCAL—have stranded when there has been no plausible link to MFA sonar, and, even when strandings have been correlated temporally with sonar outside of SOCAL, scientists in some instances have identified likely causes that are entirely unrelated to sonar exposure. J.A. 104, 540, 613-618; App. 256a-257a. In other words, the mechanism by which MFA sonar may have contributed to marine mammal injuries is not understood and, while "several competing hypotheses" exist, "little definitive information is available." App. 257a.

In these circumstances, NMFS found it significant that stranding events that have been associated with sonar use occurred "in locations *other than California*" and "shared several common factors" including the presence together of a strong surface duct, multiple vessels simultaneously employing MFA sonar, and, significantly, "steep bathymetry adjacent to deep water and confined geography with limited escape routes for whales trying to avoid sonar sources." App. 255a, 257a (emphasis added); see J.A. 614-616. The Navy's MFA-sonar training in SOCAL occurs, by contrast, "where [the Navy] will not encounter these circumstances" together. App. 255a; J.A. 169. NMFS accordingly concluded that the Navy's use of SOCAL mitigation measures "will minimize the likelihood of beaked whales being caught in [the] circumstances that [have] characterize[d] known strandings." App. 255a-256a.

Thus, while evidence exists that sonar "may" injure or kill marine mammals under certain conditions (App. 76a), the science does not show that sonar use in SOCAL is *likely* to do so. And the Navy's 40-year history of MFA-sonar training in SOCAL with no evidence of marine mammal injuries—not to mention the fact that various species of marine mammals, including whales, have con-

tinued to follow the same migration routes in SOCAL, see App. 275a-276a—strongly confirms that conclusion. The most that can be said is that there is a "mere possibility" that MFA sonar will irreparably injure marine mammals in SOCAL. That possibility—which is little more than speculation—is wholly inadequate to support the "drastic remedy" (*Munaf*, 128 S. Ct. at 2219) of a preliminary injunction.

2. Article III remedies, moreover, must redress an "injury to the plaintiff" rather than an "injury to the environment," *Friends of the Earth, Inc.* v. *Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 180-181 (2000), and the court of appeals correctly recognized that the respondent organization must establish "irreparable harm to [their] membership"—not simply to marine mammals—to obtain injunctive relief. App. 75a.

Respondents and their members claim to derive aesthetic, recreational, and vocational benefits from certain species of marine mammals in SOCAL, and they therefore contend that they would be injured if such mammals are harmed. See J.A. 384-466 (standing declarations). Respondents, however, have no legally cognizable interest in individual members of a species. Accordingly, the "loss of only one [animal] is [not a] sufficient injury to warrant a preliminary injunction"; a plaintiff "must demonstrate 'a substantial likelihood of * * * irreparable harm'" to his own interests resulting from some form of "irretrievabl[e] damage [to] the species." *Fund for Animals* v. *Frizzell*, 530 F.2d 982, 986-987 (D.C. Cir. 1975); accord *Water Keeper Alliance* v. *DoD*, 271 F.3d 21, 34 (1st Cir. 2001) (death of a "single member of an endangered species" does not qualify as irreparable harm absent showing of how "probable deaths * * * may impact the species").

Any finding of irreparable injury *to respondents* therefore must rest upon a likelihood of a harm to the species as a whole that is "permanent or at least of long duration, *i.e.*, irreparable," *Village of Gambell*, 480 U.S. 545, and that would materially diminish the ability of respondents' members to observe the species in question. The court of appeals concluded that respondents had carried their burden in the absence of such a showing, and its analysis confirms that its "mere possibility" standard impermissibly lowers the bar established by the long-standing requirement of a likelihood of such harm.

The court relied upon the EA's tabulation of 564 non-fatal Level-A harassments as showing that MFA sonar will "cause permanent harm to marine mammals." App. 76a. That conclusion, however, neither accurately reflects the Navy's EA nor addresses how respondents' members would be irreparably harmed. The Navy's modeling predicted eight annual *non*-fatal Level A harassments for common dolphins based on the assumption that the Navy would not employ its mitigation measures. J.A. 223-224 & n.**. The EA explained that such injuries "would not occur," however, because dolphins, which frequently surface and travel in large groups, are easily spotted and avoided with the Navy's mitigation measures. J.A. 184.

The remaining "Level A" harassments tabulated by the EA involve beaked whales. Yet the EA explains that the underlying computer modeling predicted only *non*-injurious Level-B harassments for beaked whales. J.A. 178, 185-186, 199, 224 nn.**. The Navy adopted a "policy" under which "modeled Level B harassment of beaked whale species" would be "considered as a potential Level A harassment" and they therefore were tabulated as such. J.A. 200; see J.A. 170, 226. But such mod-

eled, *temporary* harms do not establish that irreparable harm is actually likely to result even to an individual beaked whale, much less to the species as a whole or to respondents. Indeed, respondents and their members have submitted no evidence that they have ever seen a beaked whale or have any plans to do so. See J.A. 384-466.[8] The absence of any evidence of an injury—let alone irreparable injury—to respondents underscores that the "mere possibility" of harm standard is no standard at all and is entirely at odds with the extraordinary and drastic character of preliminary injunctive relief.[9]

C. The Balance Of Hardships And The Public Interest Cannot Support The District Court's Injunction

The Ninth Circuit's distortion of equitable principles extended still further to the court's approach to balancing the hardships of the parties and the public interest. The "traditional function of equity has been to arrive at a 'nice

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[8] Even respondent Jean-Michel Cousteau claims only that he has encountered the "major baleen and toothed whales" of the world. J.A. 397. That omission, of course, is consistent with respondents' apparent view that "[b]eaked whales are particularly difficult to observe." App. 22a; cf. Resp. 08-55054 C.A. Br. 4, 57 n.20.

[9] The district court noted that respondents demonstrated that "MFA sonar *can* injure and kill marine mammals, and cause population-affecting levels of disruption," and pointed in large part to the Navy's EA. App. 163a, 216a-217a (emphasis added). But, as explained above, the EA's model predicted only *eight* injuries annually to one species (common dolphins) if the Navy failed to use its own mitigation measures. The court's reference to population-affecting levels of "disruption" thus necessarily referred to predicted "Level B" harassments (see J.A. 175-176, 223-224 & n.**), the vast majority of which would be avoided using the Navy's NDE II mitigation measures and, in any event, were predicted to be temporary, short-term, and "highly unlikely" to cause "behavioral patterns [to be] abandoned or significantly altered." J.A. 175.

adjustment and reconciliation' between the [parties'] competing claims" of injury resulting from "the granting or withholding of the injunction," through "balanc[ing] the conveniences of the parties and possible injuries to them" and "mould[ing] each decree to the necessities of the particular case." *Romero-Barcelo*, 456 U.S. at 312 (citations omitted). Beyond that, this Court has emphasized that "courts of equity should pay particular regard for the public consequences in employing the extraordinary remedy of injunction," explaining that interim relief may be withheld pending "a final determination of the rights of the parties" where it would "adversely affect a public interest." *Ibid.* (quoting *Yakus*, 321 U.S. at 440). The Ninth Circuit's analysis is fatally flawed in both respects.

1. In this case, the balance tips decisively against an injunction. The United States is "currently engaged in war, in two countries," App. 181a, and many of the same men and women who must train in SOCAL must thereafter conduct daily aircraft missions or deploy into Iraq and Afghanistan from Navy strike groups. In the judgment of those responsible for their training and safety, including the President and the CNO, the preliminary injunction presents an unacceptable risk to training effectiveness and the national security of the United States. App. 231a-232a, 342a-347a. Congress has similarly determined that the public interest in protecting marine mammals must be subordinated to the interest in military preparedness activity where, as here, the Department of Defense has determined an MMPA exemption is "necessary for national defense." 16 U.S.C. 1371(f) (Supp. V. 2005); see pp. 34-37, *supra*. As discussed above, that statutory provision alone defeats any basis for an injunction. But in any event, "no governmental interest is more compel-

ling than the security of the Nation," *Haig* v. *Agee*, 453 U.S. 280, 307 (1981) (citing *Aptheker* v. *Secretary of State*, 378 U.S. 500, 509 (1964)), and, in this case, the "mere possibility" of irreparable harm asserted by respondents' cannot outweigh that paramount interest.

The Ninth Circuit itself recognized that the Navy could be unable to effectively train and successfully certify a strike group under the preliminary injunction. App. 88a-89a. But it decided that that "possibility" must become a reality before the Navy "may return to the district court to request relief on an emergency basis," since the Navy's prediction of harm to national security based on the professional military judgments of the Nation's top naval officers will be "necessarily speculative" until the Navy actually operates under the injunction's restrictions. App. 80a, 88a-89a. That asymmetrical approach to the court's "balancing" of the hardships significantly distorts the equitable principles that the court invoked.

Indeed, absent from the Ninth Circuit's analysis is any attempt to weigh the *magnitude* of potential harm to one party against the harm to the other and to the public interest. The harm claimed by respondents is their generalized assertion of an unquantified impact on their members' aesthetic enjoyment of certain marine species in SOCAL, where the expert agency charged by Congress with protecting marine mammals concluded the impact will be only minor and temporary for the individual animals involved. By contrast, the harm to the Navy and the public from the injunction is both concrete and potentially catastrophic. The Navy centers its global management of strategic naval forces around a strike group's timely preparation for deployment. The inability to do so during a scheduled COMPTUEX and JTFEX, particularly at a time of war, would severely undermine the

United States' ability to conduct warfare operations and have enormous adverse implications for national security. App. 314a-325a; see App. 343a-344a; J.A. 235, 577.

Beyond that, the ability to effectively conduct strike-group sonar training is essential to the adequate preparation of our forces before they are deployed into potentially hostile waters. As discussed above, a modern diesel-electric submarine not only poses a lethal threat to a strike group, but is "nearly undetectable" absent MFA sonar. App. 274a. Moreover, even with MFA sonar, locating and tracking an enemy submarine is an extraordinarily difficult task, which relies on "perishable skills that must be honed and realistically tested." App. 356a. Nearly a century ago, a former Assistant Secretary of the Navy observed that "the only way in which a navy can ever be made efficient is by practice at sea, under all the conditions which would have to be met if war existed." 3 *State of the Union Messages of the Presidents 1790-1966*, at 2285 (Fred L. Israel ed., 1966) (Theodore Roosevelt). While the sophistication of naval operations has increased greatly over the past century, the need for such training is no less acute.

The risk of harm to the national security by enjoining the training exercises at issue must be given great weight in any equitable balancing. The sworn declarations of the Nation's top naval officers concerning the importance of those exercises and the potential impact of the preliminary injunction on the safety of Sailors and Marines deployed abroad or on their ability to carry out vital operations in a climate with no margin for error cannot properly be dismissed as mere "speculation." The consequences for the Navy, its personnel, and the public, of that potential becoming a reality are simply too great.

2. The court of appeals ignored another aspect of the public interest that also weighs strongly against entry of an injunction: the degree to which an injunction is necessary to further the purposes of the relevant statute. See *Romero-Barcelo*, 456 U.S. at 314-315. This is not a case in which the Navy prepared no environmental documentation under NEPA or wholly disregarded a critical environmental impact in its evaluation. The Navy prepared a 293-page environmental assessment that comprehensively evaluated the possible impacts of MFA sonar on marine mammals, and NMFS has also furnished its own expert assessment of those impacts to the Navy on a number of occasions. A central purpose of NEPA—ensuring that agency decision-makers are fully informed of the relevant impacts, risks, and uncertainties, see *Public Citizen*, 541 U.S. at 768—thus was fully served, indeed, to a degree rarely matched even in the most comprehensive *EIS*. No injunction therefore could be justified in this case on the ground that still further study was necessary to fulfill the purposes of NEPA.

3. The President determined that the district court's injunction "undermine[d] the Navy's ability to conduct realistic training exercises that are necessary to ensure the combat effectiveness of * * * strike groups," App. 232a, and the CNO determined that, in his professional judgment, two provisions of the preliminary injunction in particular created unacceptable risk of harm to national security. App. 344a-345a.[10] The Ninth Circuit, however, ruled that the district court, based on a review of "the record as a whole," permissibly found that its injunction "will not likely compromise the Navy's ability to effec-

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[10] The CNO's classified declaration provides further detail.

tively train and certify its west-coast strike groups." App. 81a. That conclusion was in error.

Assessing the acceptable degree of risk to the effectiveness of military training is precisely the type of "professional military judgment[]" the judiciary should avoid. *Gilligan*, 413 U.S. at 10. "[I]t is difficult to conceive of an area of governmental activity in which the courts have less competence," *ibid.*, particularly where the evaluation of threats to national security must rest on "[p]redictive judgment[s] * * * made by those with the necessary expertise." *Department of the Navy* v. *Egan*, 484 U.S. 518, 529 (1988). For these reasons, this Court has repeatedly emphasized that "courts must give great deference to the professional judgment of military authorities concerning the relative importance of a particular military interest." *Goldman* v. *Weinberger*, 475 U.S. 503, 507 (1986); see *Rostker* v. *Goldberg*, 453 U.S. 57, 66 (1981).

In balancing the respective harms, however, the Ninth Circuit did not even mention the formal determination by the President—the *Commander-in-Chief*—that the restrictions imposed by the injunction would undermine the Navy's ability to conduct training necessary for combat effectiveness. App. 231a-232a. And, while the court briefly noted that the judgments of the CNO and top Navy officers are "entitled to substantial deference," it neglected to heed this Court's familiar admonitions by second-guessing the very judgments of the CNO and other naval officers to which it owed great deference. Deference in this context requires far more than respectful consideration as part of a court's review of "the evidence contained in the record as a whole." App. 81a. The exercise of professional military judgment, particularly in areas involving predictive assessments of risk, is built upon decades of real-world military experience, and

courts simply lack the independent knowledge and expertise needed to evaluate complex military judgments.

a. The Ninth Circuit nevertheless undertook its own independent review and rejected considered military assessments concerning the impact of the district court's order to terminate sonar operations whenever a marine mammal is detected within 2200-yards (1.25 miles). That distance is 11 times greater than the existing 200-yard shutdown distance developed in consultation with NMFS and employed by the Navy, App. 226a, and it would increase the surface area within which a marine mammal's presence will force a sonar shutdown by a factor of 121 (11^2). App. 226a, 332a, 344a-345a. The courts should have credited the Navy's willingness to avoid harm when possible rather than displacing the judgments of the CNO and other high-ranking naval officers that the 2200-yard mandatory shutdown requirement would "unacceptabl[y] risk" training and national security. App. 343-345. See App. 332a, 353a-357a; see also App. 269a-271a, 279a-285a.

The court of appeals rejected the CNO's assessment based on its review of after-action-reports from eight SOCAL exercises. App. 83a-84a & n.65. Those reports indicate that the Navy shut down sonar 27 times in encounters with marine mammals and, in the court's view, the 21 additional shutdowns that would have been required by a 2200-yard shut-down zone would not likely harm training. App. 83a. Even if the Ninth Circuit were correct in its assessment of the reports, its determination that little harm would result from nearly doubling the number of shutdowns would be suspect. But the court's understanding of the reports in fact was deeply flawed. Only 12 of the 27 actual sonar shutdowns were mandatory under the Navy's own mitigation measures (because

marine mammals were within 200 yards), App. 83a & n.65, and Vice Admiral Lockyear, who commands the U.S. Third Fleet, explained that the 15 voluntary shutdowns likely occurred only at "tactically insignificant times." App. 354a-356a ("No Commanding Officer surrenders contact on a submarine unless ordered to do so."). In fact, Navy commanders continued to employ MFA sonar in 72% of their encounters with marine mammals between 200 and 2200 yards, yet those operations would be enjoined under the district court's decree.[11] The court of appeals' reliance on the after-action reports thus perversely punishes the Navy (and the public) for its officers' voluntary attempts to accommodate environmental concerns when doing so will not endanger training, by imposing a mandatory judicial order to discontinue sonar operations even at significant tactical junctures.

The Ninth Circuit declined to defer to the Navy's military assessment of the risk of imposing *mandatory* shutdowns in *all* such encounters because, in its view, the after-action reports "fail[ed] to support" Admiral Lockyear's explanation. App. 84a n.65. But the after-action reports simply did not specify whether encounters occurred at tactically significant periods (*ibid.*), and they do not undermine the Admiral's explanation. Had the court of appeals properly deferred to military judgments, such an uncontradicted declaration would have been controlling. Instead, the court simply disregarded the

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[11] Eight of the 15 voluntary shutdowns occurred when marine mammals were within 2200 yards. See Pet. C.A. Exhibits in Supp. of Emergency Mot. for Stay Pending Appeal, Tab 16, Att. B at 2-3, Att. C at 3-6, Att. D at 3, Att. E at 3-5, Att. F. at A-3 to A-10, Att. G at 10-13 (after-action reports). When compared to the 21 additional encounters identified by the Ninth Circuit in which sonar use continued, Navy commanders shuttered their sonar only 28% of the time.

Navy's explanation that its voluntary actions cannot justify a *mandatory* 2200-yard shutdown zone regardless of tactical considerations. App. 354a-356a.

The Ninth Circuit cited the fact that the Navy has used a 2200-yard shut-down zone for a specific *low*-frequency active (LFA) sonar system as justifying that restriction for MFA sonar. App. 85a. But LFA sonar is utilized for the *long*-range detection of submarines (including at ranges exceeding 100 miles), *NRDC* v. *Evans*, 279 F. Supp. 2d 1129, 1161 (N.D. Cal. 2003); 08-55054 C.A. Supp. E.R. 220, and it is self-evident that the tactical impact of a 2200-yard (1.25-mile) shut-down zone for LFA sonar involves entirely different tactical considerations from those pertinent here. App. 277a-285a; cf. J.A. 508-509. The Ninth Circuit's willingness to strike out on its own in this complicated military and scientific context underscores the degree to which it has failed to defer to the professional military judgment of the Nation's most senior naval officers and overstepped the bounds of its equitable discretion under traditional principles.

b. The court of appeals similarly erred in concluding that requiring a six decibel (75%) reduction in sonar power in significant surface ducting conditions would not likely prevent effective training because "such conditions occur relatively rarely" in SOCAL. App. 86a. That rationale does not support the injunction. If significant surface ducting is not present, respondents' claim that harm to marine mammals from sonar exposure increases in such conditions has no force. And, when significant surface ducting *does* occur during ongoing exercises, the Navy must be able to train effectively in such conditions. Indeed, because submariners are trained to exploit surface ducting to conceal themselves from sonar detection, it is particularly important that sonar operators receive

training in those conditions when they do exist. Pet. 32; App. 299a-300a, 333a; see also App. 278a (MFA sonar is required in "all environments"). The injunction's 75%-power-reduction requirement—even when no marine mammal is present—renders realistic training in that environment impossible. *Ibid.*

The injunction's threat to effective training, moreover, is exacerbated by the fact that surface ducting cannot be effectively predicted in advance. App. 299a-300a, 333a. An injunction that requires the unexpected power-down of all ships in a strike group when significant surface ducting conditions arise—without regard to the tactical significance of the timing, the length of time such conditions may persist, or the presence of any marine mammal—imposes unacceptable and artificial restrictions that would "prevent[] realistic training" and thus jeopardizes the readiness of our naval forces to confront the enemy in real-world situations in which surface ducting exists. *Ibid.*; App 342a-345a; p. 13, *supra.*

* * * * *

The Ninth Circuit fundamentally erred in failing to respect the Executive's judgment that "emergency circumstances" exist under NEPA and at every step of the analysis of the propriety of injunctive relief. It did so, moreover, in a manner that conflicts with the collective judgment of Congress, the President, the Nation's top naval officers and the federal agency charged by Congress with protecting marine mammals. Ultimately, it affirmed an injunction that substantially risks national security and the safety of the Nation's Sailors and Marines. That extraordinary judgment was in error.

CONCLUSION

The judgment of the court of appeals should be reversed, and the case should be remanded with instructions to vacate the preliminary injunction.

Respectfully submitted.

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RESPONDENT'S BRIEF

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DONALD C. WINTER, Secretary of the Navy, *et al.*,
Petitioners,

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., *et al.*,
Respondents.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

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QUESTIONS PRESENTED

After determining that the Navy had likely violated the National Environmental Policy Act of 1969 ("NEPA") and that a preliminary injunction was warranted, the district court conducted fact-finding proceedings focused on the contested issue of whether the Navy could train and certify its strike groups while adhering to proposed mitigation protocols that would reduce environmental harm. The district court rejected some mitigation measures but imposed others after finding that those measures would permit the Navy to proceed with the training and certification activities. The Navy then asked the Council on Environmental Quality ("CEQ")—an executive-branch administrative agency with no expertise in naval training and in which Congress vested no adjudicatory authority—to determine, in an *ex parte* proceeding, that the Navy could not train and certify its strike groups if it complied with the ordered mitigation measures and that the injunction therefore created "emergency circumstances." After CEQ issued a letter disagreeing with the court's factual findings and therefore finding "emergency circumstances," the Navy argued that the district court was required to dissolve the preliminary injunction. The questions presented are:

1. Whether the district court was required to set aside its findings of fact and dissolve an injunction based thereon because CEQ, an administrative agency with no expertise bearing on the subject matter of the court's factual findings and in which Congress has vested no adjudicatory powers, disagreed with those findings and therefore found "emergency circumstances"?

2. Whether, in any event, the district court's factual findings were clearly erroneous or the district court otherwise abused its discretion in granting injunctive relief.

*Submitted pursuant to Supreme Court Rule 24.2. *See also Holmes v. Securities Investor Protection Corp.*, 503 U.S. 258, 266 n.12 (1992).

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STATEMENT

The district court found that Petitioners ("the Navy") had likely violated the National Environmental Policy Act of 1969 ("NEPA") by failing to prepare an environmental impact statement to consider the effects that certain long-planned naval training exercises using high-intensity sonar would have on marine mammals off the coast of Southern California. The Navy does not question that finding in this Court. Nor does the Navy challenge here most of the elements of the preliminary injunction entered by the district court and later modified by the Ninth Circuit—a tailored injunction that has allowed the Navy to proceed with the training notwithstanding its NEPA violations. Instead, the Navy argues that the district court erred when it refused to strike from its injunction two mitigation measures because of their alleged effect on the Navy's training and certification program. The court, after reviewing extensive evidence gathered during detailed fact-finding proceedings, found that the Navy could continue with its training exercises using the contested measures, and therefore declined to strike them from the injunction.

The Navy argues that a letter it procured from another executive-branch agency, the White House Counsel on Environmental Quality ("CEQ"), disagreeing with the district court's finding, compelled the court to strike the challenged measures. This novel argument, reduced to its essentials, is that an Article III court must set aside its findings of fact and modify an injunction because an administrative agency in which Congress has vested no adjudicatory authority, and which lacks

any expertise in the issue in dispute, disagrees with the court's findings. The consequence of the Navy's argument—that CEQ was entitled to sit as a "court of errors" in review of the district court's findings—ignores not just NEPA but bedrock principles of administrative law and constitutional doctrine concerning the separation of powers between the executive and judicial branches.

The Navy further invites the Court to subvert established principles of equity jurisprudence and appellate review in favor of an unprecedented and unsound rule of absolute deference to the views of the Executive. It was not clearly erroneous for the district court to find that the substantial evidence of the Navy's successful pre-litigation use of mitigation measures submitted by Respondents was more persuasive than the Navy's post-litigation declarations asserting that such mitigation would interfere with training. Instead of arguing that the court's factual findings were clearly erroneous, which is the applicable standard of review, the Navy argues that a federal court must accept the Executive's factual assertions when military matters are at issue, even when, as here, the evidence convinces the court that the Executive's representations are inconsistent with the factual record. This Court has wisely declined to foreclose judicial review of Executive decisions touching on military affairs. Once again, the Executive's attempt to circumvent the courts should be rejected.

1. This action arose from the Navy's plan to use mid-frequency active ("MFA") sonar during 14 training exercises off the coast of Southern California between February 2007 and January 2009 (the

"SOCAL exercises"). Ignoring its own findings regarding the substantial harm that its use of MFA sonar during the SOCAL exercises would cause to marine mammals, as well as the precedent developed in prior litigation concerning use of MFA sonar, the Navy refused to prepare an Environmental Impact Statement ("EIS"), refused to thoroughly consider alternatives as required by NEPA, and refused to consider or employ many of the safeguards it had used in the past to avoid significant harm to marine mammals. These violations of federal law are not contested here.

2.a. The coastal waters off Southern California are among the richest and most biologically diverse in the world. App. 11a; J.A. 785-86. They contain at least 37 species of marine mammals, including a globally important population of endangered blue whales and several small regional populations, including pygmy sperm whales and coastal bottlenose dolphins, for which the loss or impairment of even a few members would compromise the entire population. App. 11a; 07-56157 C.A. E.R. ("E.R.") 341-43; J.A. 475-76, 533-34. The California shelf margin is also one of the world's "key areas" for at least seven species of beaked whales, including one (Perrin's beaked whale) whose entire known range falls between San Diego and Monterey. J.A. 715; 08-55054 C.A. S.E.R. ("S.E.R.2") 149-80.

MFA sonar generates piercing underwater sound at extreme pressure levels. Its effects on marine mammals in proximity to the sonar source are devastating. Mass strandings of beaked whales and other marine mammals, including pygmy sperm whales, have been caused by the use of active sonar.

J.A. 666-705, 717-23, 730-31, 735, 737-446 (published scientific studies and reports); J.A. 756-79; 07-56157 C.A. S.E.R. ("S.E.R.") 180-90 (Navy documents and reports). Moreover, beaked whales are particularly vulnerable and have shown an array of physical traumas in sonar-related strandings, including hemorrhaging around the brain, ears, kidneys, and acoustic fats; acute spongiotic changes in the central nervous system; and gas/fat emboli in the lungs, liver, and other vital organs. J.A. 600-02, 673-89, 738-41, 760; S.E.R. 180. These pathologies are severe and can cause nervous and cardiovascular system dysfunction, respiratory distress, disorientation, and death. J.A. 601, 666-67, 674-76, 680, 685. Such injuries harm marine mammals regardless of whether the animals later strand and are discovered. J.A. 601-02, 658, 684-85, 728, 760.

MFA sonar has also been shown to cause mass habitat displacement and hearing loss, as well as adverse behavioral alterations—including changes in feeding, diving, and social behavior—that the National Marine Fisheries Service ("NMFS") has characterized as "profound." J.A. 360-62, 474; 71 Fed. Reg. 38710, 38727 (2006). Observations by biologists during MFA sonar exercises have demonstrated the expansive range over which these impacts occur, indicating sharp declines in commonly seen species over entire exercise areas. J.A. 473-74, 582-83, 590-91, 822; S.E.R.2 232-33. For example, in the Bahamas, sightings of one beaked whale population fell to zero following a sonar-related stranding in 2000 and had not returned to pre-stranding levels five years later. J.A. 644, 656, 701.

b. The Navy's February 2007 Environmental Assessment ("EA") predicted that the planned SOCAL exercises would result in approximately 170,000 "takes"[1] of marine mammals, an extraordinary number relative to the size of cetacean populations off Southern California. J.A. 223-24. For instance, the EA projected that a deep-water stock of as small as 119 pygmy sperm whales would suffer 900 takes during each year of the challenged exercises. J.A. 223-24; E.R. 341. Similarly, the SOCAL exercises would annually take as much as 25 percent of the eastern Pacific population of endangered blue whales and 15 to 20 percent of five distinct dolphin populations. J.A. 223-24; E.R. 341-43; App. 65a-66a.

The Navy estimated that use of MFA sonar in the SOCAL exercises would result in significant "Level A" exposure, defined as exposure that "injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild," including through permanent hearing loss and cranial hemorrhaging. J.A. 160-61. This included 436 instances of Level A exposure in Cuvier's beaked whales, which represents as much as one-third of the entire west-coast stock of that species. J.A. 223-24; S.E.R.2 926-27; App. 19a.[2]

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[1] As defined in the EA and federal law, "take" means "to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal." E.R. 114; 16 U.S.C. § 1362(13). The Navy's various attempts to minimize the significance of the takes predicted by its EA fail. *See infra* pp. 47-49.

[2] This level of take dwarfs the amount creditable to commercial fishing: fisheries along the west coast reported no "bycatch," net entanglements, or injury of Cuvier's beaked whale

The Navy also estimated approximately 170,000 "Level B" exposures, defined as exposure that "disturbs or is likely to disturb a marine mammal or marine mammal stock by causing disruption of natural behavioral patterns including, but not limited to, migration, surfacing, nursing, feeding, or sheltering where such behaviors are abandoned or significantly altered." J.A. 161, 223-24. These Level B takes exclude insignificant disruptions and include only more serious harms, including habitat displacement, temporary hearing loss, and other harm to mammals' critical ability to communicate, forage, avoid predators, and multiply. 16 U.S.C. § 1362(18)(B)(ii); *see also* 72 Fed. Reg. 37409 (2007) (defining "Level B" as a "significant disturbance in a biologically important behavior"); App. 17a.

Despite the overwhelming evidence of predicted harm, the Navy concluded that the SOCAL exercises would not have any significant impact on the environment and that NEPA therefore did not require it to prepare an EIS.[3] J.A. 225.

3.a. The Navy's decision to forego an EIS ignored the judicial precedent and mitigation evidence developed in connection with the Rim of the Pacific ("RIMPAC") sonar training exercises off the Hawaiian Islands in July 2006. In the litigation relating to those exercises, which concluded seven months before the Navy issued its EA in the instant

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and other deep-water beaked whale species during their most recent 5-year enforcement period. J.A. 726; S.E.R.2 918, 923, 927-28.

[3] NEPA requires an agency to prepare an EIS for any action that may have significant effects on the environment. 42 U.S.C. § 4332(2)(C).

case, the district court enjoined the Navy from proceeding with MFA sonar exercises for failure to prepare an EIS. S.E.R. 610-16. The injunction was based on substantially the same NEPA violations found here, including a finding that the Navy's proposed mitigation was inadequate. *Id.*; App. 207a-208a.

The RIMPAC litigation was resolved in July 2006 with a stipulated consent decree, pursuant to which the Navy agreed to implement, *inter alia*, the following mitigation measures: a 1,000 meter safety zone, with a 6 decibel power-down if marine mammals are within 1,000 meters of the sonar source; an expanded 2,000 meter safety zone in surface-ducting conditions; a power-down in low-visibility conditions; and geographical restrictions (*e.g.*, no sonar use within 25 kilometers of the 200 meter isobath (coastal waters)). App. 26a-28a. The Navy's after-action report for the RIMPAC exercise reported 472 total hours of MFA sonar use and a loss of only 8 hours due to mitigation measures. App. 28a-29a. Thereafter, for the balance of 2006, the Navy adopted most of the mitigation measures used in RIMPAC, including the coastal exclusion, the expanded safety zone during surface-ducting conditions, and the 6 decibel power-down requirement at night and in low-visibility conditions, for all of its range exercises, including certification exercises. J.A. 369-75; App. 72a-73a, 190a.

b. The Navy's February 2007 EA for the SOCAL exercises estimated roughly *five times* as many takes of marine mammals as in the previously-enjoined RIMPAC exercises, App. 204a, S.E.R.2 186, while proposing even less mitigation than the court had

found inadequate in the RIMPAC litigation. App. 29a-30a, 33a, 72a-73a, 209a-210a. This mitigation reversal backslid not only from RIMPAC and the Navy's post-RIMPAC mitigation protocols, but also from mitigation measures that the Navy had used repeatedly and successfully in MFA sonar exercises from 2002 until RIMPAC. For example, in COMPTUEX and JTFEX certification exercises conducted between 2002 and at least 2005, the Atlantic Fleet successfully employed geographic restrictions on MFA sonar use in areas with high densities of marine mammals, used "simulated geography" to relocate "choke-point" transits and near-shore exercises on three east-coast ranges into deep, open water, and barred or minimized nighttime use of sonar. S.E.R.2 447-51; J.A. 804-05.

c. None of these proven measures was included in the EA for the SOCAL exercises. The Navy discarded them "without providing convincing (or in some cases, any) evidence compelling its change in policy." App. 190a-191a (M. Smith, J., dissenting); *see also* App. 72a-74a.

The obligation to consider reasonable alternatives and appropriate mitigation in an EA (and in an EIS, when, as here, an EIS was required) lies at the heart of NEPA. 42 U.S.C. § 4332(2)(C)(iii); 40 C.F.R. § 1502.14; App. 209a-210a. The Navy has repeatedly violated the statute in planning MFA sonar exercises. Time and again it has failed to prepare an EIS for MFA sonar training despite significant effects on the marine environment, and its EAs have consistently failed to properly consider alternatives and mitigation. Every court considering the issue—in the RIMPAC litigation, a parallel case in Hawaii, and the

instant case—has found the Navy's EAs to be legally inadequate for these reasons. App. 69a-72a, 206a-210a; S.E.R. 620-622; *OMI v. Gates*, 546 F. Supp. 2d 960, 975-77 (D. Haw. 2008).

The mitigation measures that the Navy did adopt for the SOCAL exercises boiled down to a narrow 1,000 yard safety zone to be implemented only if marine mammals were spotted from the deck of fast-moving ships—a mitigation scheme the district court concluded was "grossly inadequate to protect marine mammals from debilitating levels of sonar exposure" and "woefully inadequate and ineffectual." App. 140a, 215a; *see* App. 32a-33a; S.E.R. 349-50 (5% detection rate); S.E.R. 355 (less than 2% detection rate for beaked whales directly in ship's path).

In addition, the Navy's EA for the SOCAL exercises failed to consider the cumulative effects of the exercises on profoundly affected species such as beaked and pygmy whales. The EA dismissed these effects in a single paragraph based on the supposed effectiveness of mitigation measures that the district court had already found to be ineffectual in RIMPAC. App. 210a-211a; E.R. 298.

4. Respondents commenced this action on March 22, 2007. On August 7, 2007, the district court granted in part Respondents' motion for a preliminary injunction and enjoined the Navy from conducting the then-remaining 11 SOCAL exercises based on the Navy's failure to prepare an EIS and the fatal defects in the EA. App. 195a-218a. On November 13, 2007, the Ninth Circuit affirmed the district court's finding that the Navy had likely violated NEPA but remanded to the district court with instructions to issue a "tailored injunction" that

would ensure that the Navy could train effectively while providing meaningful safeguards for the protection of the environment. App. 171a-174a.

The district court issued its tailored injunction on January 3, 2008, after receiving extensive briefing from the parties and touring the destroyer *USS Milius* to improve its understanding of the feasibility of proposed mitigation measures. App. 150a. In tailoring its order, the district court expressly acknowledged and credited the government's military readiness concerns – it rejected many of the geographic exclusions proposed by Respondents, accepted the Navy's representations that the bathymetry off southern California presents unique training opportunities, and declined to limit the use of sonar at night or in conditions of low visibility notwithstanding the Navy's adoption of such limitations throughout the latter half of 2006. App. 164a-170a; 103a-104a.

The injunction permitted the Navy to conduct the remaining SOCAL exercises provided that it: (1) suspend use of MFA sonar when a marine mammal is detected within 2,200 yards of the sonar source; (2) reduce the MFA sonar level by 6 decibels when surface-ducting conditions are detected; (3) exclude MFA sonar from within 12 nautical miles of the California coastline; (4) enhance efforts at monitoring for marine mammals, including the use of aircraft for at least 60 minutes before exercises begin; (5) monitor for marine mammals for 10 minutes before helicopters employ active dipping sonar; and (6) exclude MFA sonar from the Catalina Basin between

Santa Catalina and San Clemente Islands. App. 164a-170a.[4]

In its briefing and argument on the scope of the tailored injunction, the Navy objected to all six measures, claiming that they would prevent it from training and certifying its troops. App. 102a-105a. The district court ruled to the contrary, finding that the Navy's extensive and successful training with similar mitigation measures was more probative than the Navy's litigation-crafted declarations to the contrary. App. 103a-105a, 81a-82a.

5. One week after the district court entered its tailored injunction, the Navy initiated *ex parte* proceedings before CEQ in an attempt to circumvent the court's order. The Navy presented CEQ with a one-sided portion of the district court record, containing only the Navy's evidence and arguments and omitting virtually all of the evidence and argument that had compelled the district court to issue the injunction. *See* App. 237a.

Three business days later, CEQ provided the Navy a letter stating that "[d]iscussions between our staffs, your letter and supporting documents, and the classified declaration and briefing I have received, have clearly determined that the Navy cannot ensure the necessary training to certify strike groups for deployment under the terms of the injunctive orders." App. 240a. Within minutes of CEQ's determination,

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[4] On January 10, 2008, in response to arguments raised by the Navy in a stay application, the district court modified the preliminary injunction by narrowing the safety zone, surface-ducting and monitoring measures contained in the January 3, 2008 order. App. 145a-149a.

the Navy moved to vacate the entire injunction based on CEQ's action, arguing that CEQ's action mooted the injunction (the Navy has since abandoned this argument) and that CEQ's action "removed" the legal basis for Respondents' claims. Pet. D.Ct. Reply re *Ex Parte* Application for Vacatur (Dkt. No. 144) at 5. The district court denied the Navy's motion on February 4, 2008, rejecting both of the Navy's arguments, and left each of the prescribed mitigation measures in place. App. 96a-137a.

On appeal to the Ninth Circuit, the Navy took issue with only two of the six mitigation measures imposed by the district court—the 2,200 yard shutdown requirement and the 6 decibel power-down requirement during significant surface-ducting conditions—notwithstanding its earlier contention that the other four measures would impair its ability to train and certify its troops. App. 35a. The Ninth Circuit affirmed. With respect to the two measures still contested by the Navy, the Ninth Circuit agreed with the district court's finding that the record contained significant evidence of the Navy's ability to successfully train and certify strike groups using those measures, including the Navy's own after-action reports from eight prior certification exercises in the SOCAL operating area. App. 78-89a.

Acting "out of an abundance of caution," the Ninth Circuit nonetheless modified the injunction pending further review to satisfy the remaining concerns stated by the Chief of Naval Operations in his affidavit. App. 91a-95a. Specifically, the Ninth Circuit modified the 2,200 yard safety zone so that the Navy would be required only to reduce, rather than suspend, its use of MFA sonar if marine

mammals are detected at a "critical point in the exercise," defined as a point when, in the discretion of the Admiral overseeing the exercise or the commander of the sonar-emitting vessel, continued use of MFA sonar is critical to the certification of a strike group or the effective training of its personnel. App. 93-94a. The Ninth Circuit further modified the power-down requirement during significant surface-ducting conditions so that it would apply only when a marine mammal is detected within a specified distance from the sonar source. App. 94-95a.

Finally, the Ninth Circuit modified the injunction to provide that the Navy could seek emergency relief from the district court in the unlikely event that the required mitigation measures, once implemented, did interfere with training and certification. App. 88a-89a. The Navy has trained and certified its strike groups since February 2008 without seeking such relief.

SUMMARY OF ARGUMENT

1. The district court was not required to set aside its findings of fact and dissolve its injunction in response to CEQ's subsequent disagreement with those findings.

a. The "duty and function" of CEQ under NEPA is limited to gathering and analyzing information and making recommendations to the President to assist in formulating national environmental policy. *See* 42 U.S.C. § 4344. Congress did not delegate to CEQ the authority to review a district court's factual findings governing specific terms of an injunction, make contrary findings, and then cause the court to dissolve its injunction in favor of CEQ-sponsored

"alternative arrangements." The Navy's argument that the court was obligated to defer to CEQ's unexpressed interpretation of the word "emergency" in 40 C.F.R. § 1506.11 is beside the point, because even if every "condition of urgent need," Br. 24, were an "emergency," the district court's factual finding that the Navy *could* effectively train and certify its strike groups under the terms of the injunction establishes that no urgent need exists. The Navy cites nothing in NEPA, or any other principle of law, that requires the district court to set aside its own factual findings and injunction because CEQ subsequently decided that the district court's findings were incorrect. The doctrine of collateral estoppel also barred CEQ's re-adjudication of the district court's factual findings.

b. More fundamentally, it has been well-established since this Court decided *Hayburn's Case* that our constitutional separation of powers doctrine does not permit an agency of the executive branch to review and revise the decisions of an Article III court. CEQ's actions violate this core teaching of *Hayburn's Case* and the separation of powers doctrine.

c. CEQ's findings would be invalid even if the district court had not previously decided the same issue. CEQ purported to exercise an adjudicatory authority, yet no such adjudicatory authority has been delegated to CEQ by Congress. Furthermore, CEQ's determination is not entitled to deference, because CEQ has no expertise with regard to naval training, and it rendered a hasty decision on an incomplete record, without the participation of one of the interested parties, and without offering any

reasoning or analysis for its conclusion that the district court's findings were wrong. Moreover, CEQ's decision-making also violated Section 555(b) of the Administrative Procedures Act ("APA"), which governs informal adjudications of the sort at issue in this case and requires that interested persons be afforded the opportunity to "appear before an agency or its responsible employees for the presentation, adjustment, or determination of an issue, request, or controversy." 5 U.S.C. § 555(b). CEQ offered no reason why the orderly conduct of public business would have prevented participation by Respondents, and its violation of Section 555(b) deprived Respondents of their substantial rights and was prejudicial.

d. CEQ contravened NEPA by granting the Navy's long-planned military activities an exemption from NEPA's otherwise applicable requirements that lacks any foundation in the statutory text and is inconsistent with Congressional actions restricting military-readiness exemptions to other statutes. NEPA must be observed unless compliance would create an irreconcilable and fundamental conflict with another statutory provision, and based on the district court's findings that the Navy can train and certify its strike groups using the challenged measures, no such conflict is present here.

2. The district court properly applied established equitable principles in issuing its tailored injunction, and the Navy's assignments of error are meritless.

a. The Navy contends that the district court lacked discretion to weigh harms to marine mammals

in this NEPA action because of a national defense exemption that is found in a different statute, the Marine Mammal Protection Act ("MMPA"). The Navy is incorrect. An Article III court's traditional equitable authority cannot be denied or limited absent the clearest command to the contrary from Congress. There is no such clear command in NEPA, which, unlike the MMPA and other environmental statutes, does not contain a national defense exception. Congress has not directed the courts to permit the Navy to harm marine mammals without first sufficiently investigating that harm and determining, as NEPA requires, the extent to which adverse effects can be avoided.

b. The Navy argues that the lower courts' analyses rested on a finding of a "mere possibility" of irreparable harm. The Navy is mistaken. The lower courts found that Respondents had established irreparable harm "to a *near certainty*." The irreparable harm found in this case consisted of harm to Respondents' standing declarants, to the environment, and widespread irreparable species-level harm, including to Cuvier's beaked whales and a number of other marine mammal species. The district court's finding of a "near certainty" of such irreparable harm is not clearly erroneous and, under well settled principles of appellate review, should be affirmed. Therefore, this case does not require examination of the Ninth Circuit's sliding-scale standard for determining irreparable harm, which, in any event, is entirely consistent with this Court's precedents and with the rule in other circuits.

c. The Navy argues that the lower courts failed to give due consideration to the public interest in a

prepared military. This is incorrect. The lower courts paid substantial deference to the Navy regarding not only the importance of MFA sonar training to national security, but also the impact of particular mitigation measures on that training.

The district court specifically *rejected* a number of the mitigation measures proposed by Respondents in deference to the Navy. Deference does not require complete abdication of the federal courts' independence, however. The district court properly engaged in exhaustive fact-finding proceedings to test the Navy's factual assertions that the remaining mitigation measures would prevent the Navy from training and certifying its forces. The court properly considered the substantial evidence that the Navy had, in fact, *repeatedly* trained and certified its forces using the same or very similar mitigation measures before deciding to abandon such mitigation. The district court's factual determination that the Navy could train and certify its strike groups effectively under the challenged mitigation measures is well-supported by the record and is not clearly erroneous.

The Ninth Circuit showed further deference to the Navy by modifying the injunction so that (i) the Navy may obtain expedited relief from the injunctive measures in the event training or certification is actually impeded by the challenged measures, and (ii) pending disposition in this Court, the Navy may suspend the expanded safety zone and modify the power-down if those measures interfere with critical stages of training. App. 91a-95a. The Navy has not sought any emergency relief; instead it has trained and certified its troops under the ordered measures since February 2008. Thus, even if the Court were to

hold that the district court did not afford adequate deference to the views of the Navy declarants, there would be no basis for vacating the injunction *as modified* by the Ninth Circuit, because it is clear from the Navy's post-injunction training activities that the modified injunction has allowed the Navy to train and certify its strike groups. At a minimum, therefore, this Court should affirm the preliminary injunction under the terms of the Ninth Circuit's stay order for the remainder of the SOCAL exercises.

ARGUMENT

I. The District Court Was Not Compelled To Set Aside Its Own Findings And Injunction Based Upon CEQ's Conclusory Determination That Those Findings Were Wrong

After thorough fact-finding proceedings, the district court found that the Navy could train and certify its strike groups using the challenged mitigation measures in light of the Navy's past mitigation practices. Seeking a more favorable forum, the Navy then took its case to CEQ with an abridged record that deliberately omitted critical evidence of prior mitigation on which the court had based its findings. This was an *ex parte* proceeding: Respondents were given no notice or opportunity to be heard. The sole purpose of this adjudication that ignored both Respondents and their evidence was to circumvent a court order by Executive fiat instead of appealing to a higher court, and to replace that binding Article III order with administrative "alternative arrangements" preferred by the Executive. These unprecedented proceedings exceeded the grant of CEQ's authority, violated basic

principles of collateral estoppel and administrative law, and, most fundamentally, violated the separation of powers doctrine. Each of these reasons why CEQ's ruling did not require the district court to dissolve its injunction stands on its own but each of these related violations also compounded and magnified the others. There is no warrant in NEPA, administrative law, or the Constitution for this coordinated attack by the Navy and CEQ on the authority of the federal courts.

A. CEQ Is Not Authorized to Redetermine Factual Issues Decided By A District Court

The Navy paints this case as a run-of-the-mill dispute regarding the deference that a district court owes to an agency's interpretation of its own regulations. *See Auer v. Robbins*, 519 U.S. 452 (1997). In so doing, the Navy ignores a simple and indisputable fact: CEQ could not have determined that "emergency circumstances" existed—under *any* definition of that term—without first rejecting the district court's factual finding that the Navy could train and certify its strike groups under the challenged mitigation measures. Given this reality, there is nothing typical about this dispute. The Court's acceptance of the Navy's position would break new and dangerous ground, by embracing the remarkable proposition that Article III courts must set aside their reasoned findings of fact and dissolve injunctions based thereon when administrative agencies subsequently review and disagree with the courts' findings. It is the role of appellate courts, not administrative agencies, to review district courts' factual findings and consider challenges to their

orders. Neither NEPA nor any principle of law entitled CEQ to subvert that judicial authority or required the district court to treat CEQ's January 2008 letter as though it were a mandate from a higher Article III court.

As discussed above, the Navy argued to the district court that it could not effectively train and certify its strike groups if certain mitigation measures were required. App. 102a-105a. The district court conducted extensive fact-finding—carefully reviewing thousands of pages of briefing and evidence over the course of many weeks, and touring a Navy destroyer—to assess the Navy's contention that the mitigation measures would risk the Navy's ability to train and certify its strike groups. The district court found that the Navy could train and certify its strike groups using the two mitigation measures at issue in this appeal—the safety zone and the power-down requirement during significant surface-ducting conditions. App. 136a; J.A. 87a-88a. The Ninth Circuit affirmed, finding that the evidence, much of it submitted by the Navy itself or discovered in its records of past exercises, supported the district court's findings. App. 81a-82a.

Having failed to persuade the district court that the challenged mitigation measures would prevent it from training and certifying its strike groups, the Navy pressed precisely the same argument in an *ex parte* submission to CEQ. Just three business days later, CEQ issued a letter announcing that the mitigation measures that the district court found would allow training and certification would, in fact, have the opposite effect and that the district court's order therefore created "emergency circumstances"

requiring relief. App. 240a. CEQ supported this finding with a single conclusory statement "that the Navy cannot ensure the necessary training to certify strike groups for deployment under the terms of the injunctive orders." *Id.* It is the position of the Navy that when presented with this document, the district court was required to set aside its own findings and dissolve its injunction.

There is no support for the Navy's position in NEPA, which is the statute by which Congress created CEQ and authorized it to perform the "duty and function" of gathering and analyzing information and making recommendations to the President to assist in formulating national environmental policy. 42 U.S.C. § 4344.[5] Nowhere did Congress delegate any adjudicatory authority to CEQ whatsoever, let alone the power to sit in review of Article III courts.

Nor is there any principle of general administrative law that forces the district court to set aside its own factual findings because an agency subsequently disagrees with them. Although the Navy relies extensively on *Auer v. Robbins*, that decision has no application when, as here, the dispositive issue is not the interpretation of words in a regulation, but instead the resolution of a purely

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[5] CEQ's charge also includes evaluation of "conditions and trends in the quality of the environment"; recommending to the President "national policies to foster and promote the improvement of environmental quality to meet the conservation, social, economic, health, and other requirements and goals of the Nation"; and preparing "such studies, reports thereon, and recommendations with respect to matters of policy and legislation as the President may request." 42 U.S.C. § 4344. Nothing in section 4344 authorizes adjudications relating to effectiveness of military training or any other subject.

factual issue—whether the Navy can effectively train and certify under the challenged measures—that controls the outcome of the case no matter what definition of "emergency circumstances" applies. Although the district court and the Ninth Circuit were correct that the generally-accepted meaning of "emergency" means an "unexpected" or "unforeseen" occurrence, *see* App 45a n.41, 112a-113a, the present case does not turn on the definitional issue, because even if the Navy were correct that every "condition of urgent need" qualifies as "emergency circumstances," Br. 24, the district court's factual finding that the Navy could train and certify its strike groups establishes that no urgent need exists.

Once the factual issue of whether the Navy could effectively train under the challenged mitigation measures had been submitted to and decided by the district court, the court was not required to defer to a contrary finding subsequently rendered by CEQ. Indeed, CEQ ought to have deferred to the court's factual finding pursuant to the doctrine of collateral estoppel. The district court's factual findings regarding the Navy's ability to train under the challenged mitigation measures were not a preliminary determination, but rather were intended to finally resolve that issue to ensure effective training while the litigation was pending. The district court's factual findings were therefore "final" for purposes of collateral estoppel and were entitled to preclusive effect in proceedings before CEQ. *See Duvall v. Attorney General of the United States*, 436 F.3d 382, 387 (3d Cir. 2006) (agencies must adhere to common-law doctrine of collateral estoppel absent clear conflict with the "structure and purpose" of the governing statute); *see also Abbott Labs. v. Andrx*

Pharms., 473 F.3d 1196, 1206 (Fed. Cir. 2007) (collateral estoppel attaches where "a preliminary injunction proceeding 'clearly intended to firmly and finally resolve the issue,' rather than 'estimate the likelihood of success' of proving that issue"); *Hawksbill Sea Turtle v. Federal Emerg. Mgm't Agency*, 126 F.3d 461, 474 n.11 (3d Cir. 1997) ("findings made in granting or denying preliminary injunctions can have preclusive effect if the circumstances make it likely that the findings are 'sufficiently firm' to persuade the court that there is no compelling reason for permitting them to be litigated again").[6]

This does not mean, of course, that the district court's factual findings were immune from challenge. The Navy could have taken an appeal to the Ninth Circuit, and ultimately to this Court—on an expedited basis if the circumstances warranted—to press its position that the district court erred in finding that the Navy could train and certify its troops under the challenged measures. The Ninth Circuit and this Court could have reviewed the entire

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[6] In some circumstances, a litigant may invoke the doctrine of primary jurisdiction and request a court to stay judicial proceedings while an administrative body resolves material issues that (unlike here) Congress has entrusted to the agency; the court then reviews the agency's determination under a deferential standard of review. *See United States v. Western Pac. R.R. Co.*, 352 U.S. 59, 63-64 (1956). The Navy did not request such a referral, and has waived any argument that factual issues should have been decided by CEQ in the first instance. *See Northwest Airlines, Inc. v. County of Kent, Mich.*, 510 U.S. 355, 366 n.10 (1994); *CSX Transportation Co. v. Novolog Bucks Cty.*, 502 F.3d 247, 253 (3d Cir. 2007); *Gross Common Carrier, Inc. v. Baxter Healthcare Corp.*, 51 F.3d 703, 706 (7th Cir. 1995).

record upon which the district court's findings were based, heard argument from Petitioners and Respondents, and, if the findings were determined to be clearly erroneous, relieved the Navy of its obligation to undertake the challenged measures.

The Navy did not pursue these well-established appellate remedies in the first instance. Instead, after eleven months of litigation during which the Navy never sought alternative arrangements from CEQ and never claimed that there was insufficient time to prepare an EIS, the Navy, disappointed with the district court's findings, asked CEQ to step in to review and reject those findings in an *ex parte* proceeding that had no prescribed standard of review, was based on an incomplete record, and deprived Respondents of notice and an opportunity to be heard. Congress has never delegated to CEQ the authority to engage in this practice. There is no such delegation in NEPA, and none in any other statute. The district court was not required to set aside its own findings and dissolve its injunction in deference to the Navy's *ex parte* proceedings before CEQ.

B. Allowing CEQ To Sit As A Court Of Errors Violates The Separation of Powers Doctrine

CEQ's actions in this case violate the separation of powers doctrine. The Constitution establishes a government that "is divided into three distinct and independent branches" and "it is the duty of each to abstain from, and to oppose, encroachments on either." *Hayburn's Case*, 2 U.S. (2 Dall.) 409, 410 n. * (1792); *see also Mistretta v. United States*, 488 U.S. 361, 380 (1989) (the Constitution "mandates" that each branch of government remain "entirely free from

the control or coercive influence, direct or indirect, of either of the others . . .") (quoting *Humphrey's Executor v. United States*, 295 U.S. 602, 629 (1935)).

The rule that decisions of Article III courts are not subject to revision by officials of the Executive Branch is structural. It is grounded in the Constitution's mandate that "the judicial Power of the United States, shall be vested" in the courts. U.S. Const. art. III, § 1. A decision of an Article III court may be appealed "to judges appointed in the manner the constitution requires, and holding their offices by no other tenure than that of their good behavior," but may not be made "subject[]" "to a mode of revision" by an executive officer who has "cause to suspect imposition or mistake." *Hayburn's Case*, 2 U.S. (2 Dall.) at 410 n. *. "If a federal agency were to exercise [the] power to review the decisions of federal courts, the arrangement would violate the well-established rule that the judgments of Article III courts cannot be revised by the Executive or Legislative Branches." *Alaska Dep't of Envtl. Conservation v. E.P.A.*, 540 U.S. 461, 512 (2004) (Kennedy, J., dissenting) (citing *Hayburn's Case*).

This Court first applied this structural rule in *Hayburn's Case*, 2 U.S. (2 Dall.) 409 (1792), which involved a statute that granted the Secretary of War the power to review decisions of Article III courts concerning disability pension claims. The Supreme Court Justices, sitting as circuit judges, held that this arrangement violated the separation of powers doctrine. Chief Justice Jay, and Justices Cushing and Duane wrote: "[B]y the constitution, neither the Secretary at War, nor any other Executive officer, nor even the Legislature, are authorized to sit as a court

of errors on the judicial acts or opinions of this court." *Id.* at 410 n. *. Separately, Justices Wilson and Blair "deemed radically inconsistent with the independence of that judicial power which is vested in the courts" a scheme permitting "an officer in the executive department" to "revis[e] and contro[l]" the decisions of an Article III court. *Id.*

Hayburn's Case thus forbids non-Article III decision makers from sitting as a "court of errors" over the decisions of Article III courts. *Id.* This structural rule is crucial "both to protect the role of the independent judiciary within the constitutional scheme of tripartite government, . . . and to safeguard litigants' right to have claims decided before judges who are free from potential domination by other branches of government." *Commodity Futures Trading Comm'n v. Schor*, 478 U.S. 833, 848 (1986) (citations and internal quotations omitted). The rule in *Hayburn's Case* has long been a fixed star in this Court's separation of powers jurisprudence. *See United States v. Mitchell*, 463 U.S. 206, 213 n.12 (1983) (executive "revisory authority over the court is inconsistent with its exercise of judicial power"); *Chicago & Southern Air Lines, Inc. v. Waterman Steamship Corp.*, 333 U.S. 103, 113-14 (1948) ("[j]udgments, within the powers vested in courts by the Judiciary Article of the Constitution, may not lawfully be revised, overturned or refused faith and credit by another Department of Government"); *United States v. Jefferson Elec. Mfg. Co.*, 291 U.S. 386, 400-01 (1934) (judicial determination may not be "conditioned" on the revisory power of an agency); *United States v. Waters*, 133 U.S. 208, 213 (1890) (fact-based determinations of the judicial branch

cannot be "subject to the re-examination and reversal of the attorney general").

This Court reaffirmed in *Plaut v. Spendthrift Farm, Inc.*, 514 U.S. 211 (1995), that "officials of the Executive Branch" lack power to "review . . . the decisions of Article III courts." *Id.* at 218. The Court explained that federal judicial decisions are "subject to review *only* by superior courts in the Article III hierarchy," *id.* at 219 (emphasis added), because the power to "reverse a determination, once made, in a particular case," is a quintessentially *judicial power*. *Id.* at 222 (quoting *The Federalist* No. 81, p. 545 (Alexander Hamilton) (J. Cooke ed. 1961)). Simply put, decisions of Article III courts cannot be reversed or ignored by executive officers. *See Mistretta*, 488 U.S. at 409 ("neither of [the Branches] ought to possess directly or indirectly, an overruling influence over the others.") (quoting *The Federalist* No. 48, p. 332 (James Madison) (J. Cooke ed. 1961)); *Alaska Dep't of Envtl. Conservation*, 540 U.S. at 512 (Kennedy, J., dissenting) ("Judges cannot, without sacrificing the autonomy of their office, put onto the scales of justice some predictive judgment about the probability that an administrator might reverse their rulings.").

As discussed above, CEQ determined that the mitigation measures imposed in the district court's order would prevent the Navy from training and certifying its strike groups and therefore created "emergency circumstances" under which the Navy's compliance with the order should be excused. CEQ did not, and logically could not, make these conclusions without first determining that the district court had erred, because if the court's findings were

correct, the injunction created no "emergency circumstances" warranting "alternative arrangements" under Section 1506.11. CEQ reached its decision that the district court had erred without articulating or applying any standard of review, much less the "clearly erroneous" standard that an Article III court must apply in reviewing a district court's factual determinations. CEQ's actions were unconstitutional. CEQ undertook to adjudicate—to "determine facts, apply a rule of law to those facts, and thus arrive at a decision" at odds with the prior decision of the district court. *Freytag v. Commissioner*, 501 U.S. 868, 909 (1991) (Scalia, J., concurring). By reviewing, re-adjudicating, and contradicting the factual findings of a district court in order to replace the terms of a court-ordered injunction with alternative arrangements, CEQ violated the core teaching of *Hayburn's Case*.

It is no answer to argue that CEQ's actions are permissible because CEQ reviewed a preliminary injunction, not a final judgment. This Court has identified three distinct categories of cases that violate the independence of the judiciary under Article III. The first category of cases are those where this Court "refused to give effect to a statute that was said '[to] prescribe rules of decision to the Judicial Department of the government in cases pending before it.'" *Plaut*, 514 U.S. at 218 (quoting *United States v. Klein*, 80 U.S. 128, 146 (1872)). "The second type of unconstitutional restriction upon the exercise of judicial power . . . stands for the principle that Congress cannot vest review of the decisions of Article III courts in officials of the Executive Branch." *Id.* The third category bars Congress from "retroactively commanding the federal courts to

reopen final judgments." *Id.* at 219. The distinction between final judgments and injunctive orders is relevant only to the third category. But it is the second category, that Congress cannot vest review of Article III court decisions in the executive, that is at stake here.

This Court's decision in *Miller v. French*, 530 U.S. 327 (2000), similarly provides no support for the Navy's position. In *Miller*, this Court affirmed "*Congress'* authority to alter the prospective effect of previously entered injunctions" by "*amend[ing] applicable law.*" *Id.* at 344, 349 (emphasis added). *See also Robertson v. Seattle Audubon Soc'y*, 503 U.S. 429 (1992) (same). Here, Congress did not amend NEPA. Instead, the Navy referred the district court's injunctive order to CEQ; obtained an administrative ruling that the court's factual determinations were wrong and that the injunctive order therefore warranted "alternative arrangements" for compliance with NEPA; and then returned to the district court to argue that CEQ's ruling required the district court to dissolve its injunctive order. Nothing in *Miller*, or elsewhere in the entirety of this Court's Article III jurisprudence, supports the Navy's position that an administrative agency can exercise appellate-type review. Such a clear intrusion on the province of the judiciary is alien to the constitutional separation of powers doctrine and cannot be condoned.

C. CEQ's Findings Would Be Invalid Even If The District Court Had Not Already Decided The Same Issue

CEQ's findings are invalid and not entitled to deference for three additional reasons: (1) Congress has not delegated any adjudicatory authority to CEQ;

(2) CEQ's decision is contrary to Congress' intent in enacting NEPA; and (3) CEQ did not follow the procedural requirements of the APA in connection with making its decision.

1. Congress Has Not Delegated Adjudicatory Authority To CEQ

As discussed above, the "duty and function" of CEQ under NEPA is limited to gathering and analyzing information and making recommendations to the President to assist in formulating national environmental policy. *See* 42 U.S.C. § 4344. The authority to enact implementing regulations was extended not by Congress, but by Presidential Executive Order. *See* Exec. Order No. 11991 3 C.F.R. 123 (1977), *reprinted as amended in* 42 U.S.C. § 4331 (2000). Even that delegation, however, was limited to the authority to "[i]ssue regulations to Federal agencies for the implementation of *the procedural provisions* of the Act" that are "designed to make the environmental impact statement process more useful to decisionmakers and the public; and to reduce the paperwork and the accumulation of extraneous background data, in order to emphasize the need to focus on real environmental issues and alternatives." *Id.* (emphasis added). Neither Congress nor the Executive delegated any adjudicatory authority to CEQ.

Agency action falling outside its delegation of authority is entitled to deference proportional only to its power to persuade. *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944); *see United States v. Mead Corp.*, 533 U.S. 218, 231-32 (2001) (limited deference owed to classification rulings where congressional delegation did not include delegation of that

authority); *EEOC v. Arabian Am. Oil Co.*, 499 U.S. 244, 257 (1991) (limited deference owed to agency guideline where congressional delegation did not include power to "promulgate rules or regulations"); *Christensen v. Harris Cty.*, 529 U.S. 576, 596-97 (2000) (Breyer, J., dissenting) (limited deference owed where it is in doubt that Congress actually intended to delegate particular interpretive authority to an agency).[7] The weight of deference owed to the agency turns on a variety of factors, including "the thoroughness evident in its consideration" and "the validity of its reasoning." *E.g.*, *Mead Corp.*, 533 U.S. at 228. Here, these factors weigh against according any deference to CEQ.

There is no thoroughness evident in CEQ's consideration. The Navy petitioned CEQ for relief from the district court's injunction on January 10, 2008. A few days later, CEQ announced that the Navy could not train and certify its strike groups under the injunction. CEQ made its finding following *ex parte* consideration of a "record" consisting of only the Navy's evidence and arguments, omitting all contrary evidence. *See* App. 237a. CEQ deliberately ignored, or at a minimum failed to consider, the voluminous substantive evidence that the district court found persuasive and relied on in issuing its injunction. App. 54a-55a. *See Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983) (agencies cannot "entirely fail[] to consider an important aspect of the problem" or fail to

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[7] Although CEQ's interpretation of NEPA is owed "substantial deference" under *Andrus v. Sierra Club*, 442 U.S. 347, 358 (1979), the present case does not involve an interpretation of NEPA.

"examine the relevant data"); *Advocates for Highway and Auto Safety v. Fed'l Motor Carrier Safety Admin.*, 429 F.3d 1136, 1147 (D.C. Cir. 2005) (striking down agency action where the agency "simply disregarded volumes of evidence" contrary to its decision).

CEQ's decision-making is especially deficient in light of CEQ's lack of expertise with regard to naval training. *See Adams Fruit Co., Inc. v. Barrett*, 494 U.S. 638, 649-50 (1990) (no deference owed to agency acting outside its expertise). CEQ could do no more than receive evidence and argument from the interested parties on matters outside its expertise and render a decision based thereon. This is precisely the type of adjudication that is reserved for the judiciary in the absence of an express delegation from Congress. Moreover, CEQ *did not* receive evidence and argument from the interested parties, but instead considered only a partial record compiled by one interested party, the Navy. Respondents were not even aware of the CEQ proceedings, let alone afforded an opportunity to participate in them, and the record before CEQ was as biased as it was incomplete. Despite its lack of expertise and the woefully deficient record (or perhaps because of it), CEQ reached its determination regarding the Navy's ability to train in just a few days, a small fraction of the time the district court had already invested in this matter.

Worse yet, CEQ offered no reasoning or analysis to support its necessary finding that the Navy could not effectively train and certify its troops under the injunction. App. 240a. CEQ simply rubber-stamped the Navy's position. Agency decisions rendered in this fashion are not entitled to deference. *See*

Burlington Truck Lines, Inc. v. United States, 371 U.S. 156, 167 (1962).

2. CEQ's Decision Is Contrary To Congress' Intent In Enacting NEPA

Congress enacted NEPA to ensure that federal agencies "promote efforts which will prevent or eliminate damage to the environment." 42 U.S.C. § 4321. NEPA requires federal agencies to prepare an EIS for any major federal action "significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). Unlike other environmental statutes, NEPA contains no national security exemption. App. 51a-52a.

CEQ's decision to exempt the Navy's long-planned military activities from NEPA undermines the fundamental purposes of the statute and the statutory scheme Congress enacted. *See United States v. Larionoff*, 431 U.S. 864, 873 (1977); *United States v. Vogel Fertilizer Co.*, 455 U.S. 16, 25-27 (1982). Congress not only reserved for itself, *but has repeatedly exercised* the power to exempt long-planned agency activities from NEPA's otherwise-applicable statutory requirements. *See, e.g.*, Fiscal Year 2001 National Defense Auth. Act, Pub. L. No. 106-398, § 317, 114 Stat. 1654, 1654A-57 (2000) (specifically exempting Defense Department from preparing nationwide EIS for low-level flight training); 42 U.S.C. § 10141(c) (exempting EPA from NEPA review of criteria for handling spent nuclear fuel and high-level radioactive waste); 43 U.S.C. § 1652(d) (exempting construction of Trans-Alaska Pipeline from further NEPA compliance). Congress has never delegated such power, expressly or implicitly, to CEQ.

CEQ contravened NEPA by granting the Navy an exemption from NEPA's otherwise applicable requirements that lacks any foundation in the statutory text. 42 U.S.C. § 4332 requires the Navy to comply "to the fullest extent possible" with NEPA. In interpreting this clause, this Court has previously held that NEPA must be observed unless compliance "would create an irreconcilable and fundamental conflict" with another statutory provision. *Flint Ridge Dev. Co. v. Scenic Rivers Ass'n of Okla.*, 426 U.S. 776, 787-88 (1976); *see* 40 C.F.R. § 1500.6.[8] In this case, no statutory provision renders the Navy's observance of NEPA unattainable. Although the Navy contends that NEPA must give way to its statutory obligation to be "organized, trained, and equipped," 10 U.S.C. § 5062, there is no "irreconcilable" conflict present. As the Ninth Circuit explained, the district court determined that "the [mitigation] measures would not preclude the Navy from effectively training and certifying forces for deployment to combat zones in the western Pacific and the Middle East." App. 79a. By obeying the preliminary injunction, the Navy would therefore meet its responsibility to train under section 5062.

Moreover, NEPA compliance for the SOCAL exercises—which were planned in 2006—was neither impossible nor impractical. The Navy could have

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[8] While section 42 U.S.C. § 4331(a) exhorts the Federal Government to "use all practicable means" to coordinate federal programs to achieve NEPA's substantive goals, 42 U.S.C. § 4331(a), this declaration does not modify the "to the fullest extent possible language" in section 4332 or diminish the EIS and other requirements set forth in section 4332. *See Calvert Cliffs' Coordinating Comm., Inc. v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1114-15 (D.C. Cir. 1971).

prepared an EIS and avoided the court injunction altogether. The Navy could also have requested a Congressional exemption at any point, including in the many months following the August 2007 order finding a prospective violation of NEPA. It chose not to do so. Absent such action, Congress left it to the equitable powers of the courts to determine whether and on what terms long-planned agency activities that courts determine to be non-compliant with NEPA should be allowed to proceed.

If Petitioners' view were the law, the military could simply forego NEPA compliance, await the inevitable court order, and then obtain an administrative determination that environmental compliance is excused by the court's decision to enforce the law. The court of appeals properly rejected the Navy's attempt to interpret CEQ's regulation in this manner and thus create a gaping hole in NEPA. App. 51a-52a; *see Calvert Cliffs'*, 449 F.2d at 1114 (NEPA "does not provide an escape hatch for footdragging agencies" and "does not make NEPA's procedural requirements somehow 'discretionary'").[9]

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[9] CEQ's conduct also exceeded the scope of 40 C.F.R § 1506.11. First, the text of section 1506.11 limits CEQ's authority to "alternative arrangements" that provide relief from "observing [CEQ's] regulations." 40 C.F.R. § 1506.11. Nothing in the regulation authorizes CEQ to provide relief from statutory requirements. Second, the regulation requires CEQ and the affected federal agency to "limit [alternative] arrangements" to actions necessary to control the immediate impacts" of the supposed emergency, *id.*, yet CEQ provided the Navy with alternative arrangements lasting a full year.

3. CEQ's Decision Is Invalid Based On The Agency's Failure To Comply With The APA

The APA requires a court to reject as unlawful and set aside agency action, findings, and conclusions rendered "without observance of procedure required by law." 5 U.S.C. § 706(2)(D). Section 555(b) of the APA governs informal adjudications of the sort at issue in this case[10] and requires that interested persons be afforded the opportunity to "appear before an agency or its responsible employees for the presentation, adjustment, or determination of an issue, request, or controversy." 5 U.S.C. § 555(b); *see Indep. U.S. Tanker Owners Comm. v. Lewis*, 690 F.2d 908, 922-23 (D.C. Cir. 1982) (courts "have required some explanation for agency action and, to ensure the adequacy of that explanation, some opportunity for interested parties to be informed of and comment upon the relevant evidence before the agency"); *Block v. SEC*, 50 F.3d 1078, 1085 (D.C. Cir. 1995) ("[Section] 555(b) is universally understood to establish the right of an interested person to participate in an on-going agency proceeding."); Wright & Koch, Federal Practice and Procedure: Judicial Review § 8136 ("Generally, all informal adjudications have some form of the three elements—notice, some opportunity to participate and reasons.").

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[10] "Informal adjudication is a residual category including all agency actions that are not rulemaking and that need not be conducted through 'on the record' hearings." *Izaak Walton League of Am. v. Marsh*, 655 F.2d 346, 361 n.37 (D.C. Cir. 1981).

CEQ did not comply with these procedural requirements. Respondents, who had successfully obtained the injunction from which the Navy sought relief, were plainly "interested persons" within the meaning of Section 555(b). *See Nichols v. Bd. of Trustees of the Asbestos Workers Local 24 Pension Plan*, 835 F.2d 881, 896 (D.C. Cir. 1987) ("[A] party entitled to judicial review of agency action clearly qualifies as an 'interested person' who normally may intervene in the administrative proceeding."). CEQ did not provide Respondents notice of or an opportunity to participate in its proceedings, even if only to submit the evidence the district court considered and relied upon in making the very factual findings that the Navy was now pressing CEQ to reverse. Instead, CEQ made its findings based on an incomplete and one-sided record submitted by, and *ex parte* discussions with, the Navy. Such conduct may be justified in different circumstances where a *bona fide* emergency exists such that *immediate* action is required. CEQ, however, did not provide any reason why "the orderly conduct of public business" would have prevented participation by NRDC. *See Am. Communications Ass'n v. United States*, 298 F.2d 648, 650 (2d Cir. 1962) (construing APA § 6(a), which contains language similar to §555(b), "to give 'any interested person' the right to intervene in a proceeding so far as the orderly conduct of public business permits").

CEQ's violation of Section 555(b) deprived Respondents of their substantial rights and was prejudicial. *See Connor v. U.S. Civ. Serv. Comm'n*, 721 F.2d 1054, 1056-57 (6th Cir. 1983) (procedural errors are not harmless where "the claimant has been prejudiced on the merits or deprived of substantial

rights because of the agency's procedural lapses"). CEQ rendered its decision based on an incomplete and highly selective record assembled by the Navy. An experienced district court judge and three experienced appellate judges considered a complete and unbiased record and rejected the Navy's position. Had CEQ been presented with that same record, there is a substantial question whether CEQ would have reached a different conclusion.

II. The Courts Below Applied Traditional Equitable Principles In Granting Tailored Preliminary Relief

The Navy makes three arguments in support of its contention that, even if the district court correctly found that it likely violated NEPA, the court erred in granting the tailored injunctive relief under review. None is persuasive.

A. The MMPA Exemption Does Not Indicate Congressional Intent to Curtail Courts' Equitable Powers To Enforce NEPA

The Navy first argues that the national defense exemption in the MMPA, which authorizes the Secretary of Defense to exempt from that statute military activity that is "necessary for national defense," 16 U.S.C. § 1371(f)(1), restricts a court's exercise of traditional equity jurisprudence in cases enforcing NEPA, an entirely separate statute.

The Navy's argument violates the longstanding rule that an Article III court's traditional equitable authority cannot be denied or limited "[a]bsent the clearest command to the contrary from Congress." *Califano v. Yamasaki*, 442 U.S. 682, 705 (1979).

"Unless a statute in so many words, or by a necessary and inescapable inference, restricts the court's jurisdiction in equity, the full scope of that jurisdiction is to be recognized and applied." *Porter v. Warner Holding Co.*, 328 U.S. 395, 398 (1946); *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 313 (1982). In each of the cases cited by the Navy, the "balance that Congress has struck" appears clearly in the very statute being enforced. *United States v. Oakland Cannabis Buyers' Coop.*, 532 U.S. 483, 491 (2001); *TVA v. Hill*, 437 U.S. 153, 189 (1978); *Virginian Ry. Co. v. Sys. Fed'n No. 40*, 300 U.S. 515, 551-52 (1936); *see also Amoco Prod. Co. v. Vill. of Gambell*, 480 U.S. 531, 543-44 (1987) (focusing only on whether anything "*in the Act's* language, structure or legislative history" and "in § 810" manifested an intent to deny courts equitable discretion under that statute) (emphasis added).

There is no such clear command here. To the contrary, since first enacting NEPA 39 years ago, Congress has never amended the Act to provide a national security exemption, despite the near-ubiquity of such exemptions in other environmental laws. App. 51a n.45. Indeed, Congress refused to excuse the Navy from NEPA compliance when it enacted the 2003 MMPA amendments in response to the decision in *NRDC v. Evans*, 232 F. Supp. 2d 1003 (N.D. Cal. 2002), where the court had predicated its injunction against Navy sonar on likely violations of *both* the MMPA and NEPA. *Id.* at 1053. Responding to *Evans*, Congress sought to "cure deficiencies related to the incidental take permit process under MMPA," H.R. Rep. No. 108-354, at 669 (2003) (Conf. Rep.), but did not enact any corresponding NEPA exemption. *Id.* More recently, Congress reaffirmed

the specific view that Navy sonar projects should not move forward without prior NEPA review, deleting funding for a key Navy sonar training range off North Carolina because the draft EIS was suspect, and allowing expenditures only for NEPA compliance. H.R. Rep. No. 109-504, at 146 (2006); H.R. Rep. No. 109-676 (2006); 152 Cong. Rec. H7135 (2006).

Congress has had good reason not to include a parallel to Section 1371(f) in NEPA. NEPA's "manifest concern [is] preventing uninformed action." *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 (1989). In enacting NEPA, Congress was concerned that decision-makers should not "act on incomplete information." *Id.* Nowhere in NEPA has Congress indicated that the Navy must be allowed to harm marine mammals during training exercises without first sufficiently investigating that harm and determining, as NEPA requires, "the extent to which adverse effects can be avoided." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989). Nor does Section 1371(f) of the MMPA, or anything in its legislative history, indicate that Congress intended to allow the Navy to take marine mammals while training without first becoming informed through the required NEPA analysis. *See* Pub. L. No. 108-136; H.R. Rep. No. 108-354, at 668-69; H.R. Rep. No. 108-106, at 308-09 (2003).

Because there is "nothing in the language and structure [or] legislative history" of the 1371(f) exemption "suggest[ing] that Congress intended to deny courts their traditional equitable discretion" in NEPA cases, the Navy's argument that the district court lacked discretion to weigh harms to marine

mammals must be rejected. *Amoco*, 480 U.S. at 543.[11]

B. Plaintiffs' Showing of a "Near Certainty" of Irreparable Harm Far Exceeds That Necessary To Support The Injunction

1. Despite the Navy's claims to the contrary, Br. 38, the lower courts' irreparable harm analysis did not rest on a finding of "mere possibility." The district court held (and the Ninth Circuit specifically affirmed) that Respondents had established "to a *near certainty*" irreparable harm "to the environment and [Respondents'] standing declarants," as well as widespread irreparable species-level harm. App. 216a-217a (emphasis added).

The district court's finding of a "near certainty" of irreparable harm must be affirmed absent clear error. Fed. R. App. Proc. 52. The clearly erroneous standard "plainly does not entitle a reviewing court to reverse the finding of the trier of fact simply because it is convinced that it would have decided the case differently. The reviewing court oversteps the bounds of its duty under Rule 52(a) if it undertakes to

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[11] The Navy's claim that a court's equitable discretion is somehow lessened when compliance is reviewed under the APA, Br. 37, has been rejected by this Court. *Darby v. Cisneros*, 509 U.S. 137, 152-53 (1993) (holding that the provision of the APA relied on by the Navy here, preserving the "power or duty of the court to . . . deny relief on any . . . appropriate legal or equitable ground," was added "simply to make clear that 'all other than the law of sovereign immunity remained unchanged'" and, thus, the amendment "did not affect any other limitation on judicial review") (quoting S.Rep. No. 94-996 at 11 (1976)).

duplicate the role of the lower court." *Anderson v. Bessemer City*, 470 U.S. 564, 573 (1985).

The Navy effectively conceded that the SOCAL exercises will have a significant effect on the environment by seeking to avail itself of the "emergency circumstances" exception of 40 C.F.R. § 1506.11, which is applicable only when such an impact will result. Moreover, the district court's finding of "near certainty" of irreparable harm is amply supported by the record. As discussed above, *supra* pp. 3-6, Respondents submitted extensive scientific evidence showing that MFA sonar causes serious, debilitating, and even lethal injuries as well as "profound" and widespread behavioral disruptions in marine mammals. App. 11a-16a; *see also, e.g.*, J.A. 360-62, 469-80, 486-92, 579-89, 598-603, 635-46, 652-723, 729-46, 756-779; S.E.R. 160-71, 180-86, 232-258, 264-309; 71 Fed. Reg. 38727 (2006).

The Navy's own take estimates in its EA also strongly reinforce the district court's finding. App. 216a-217a. The EA estimated that the SOCAL exercises would result in approximately 170,000 takes of marine mammals, an extraordinary number relative to the size of cetacean populations off Southern California. For instance, the EA projected that 900 takes of pygmy sperm whales, a deep-water stock as small as 119 animals, would occur during each year of the challenged exercises. J.A. 223-24; E.R. 341-43. Similarly, the SOCAL exercises would take as much as 25 percent of the eastern Pacific population of endangered blue whales and 15 to 20

percent of five distinct dolphin populations annually. J.A. 223-24, 391; E.R. 341-43; App. 66a.[12]

The Navy insists that this Court turn a blind eye to these damning EA numbers. The Navy asserts that the EA's failure to account for the effect of the Navy's proposed mitigation measures renders this document unreliable. Br. 44, 45 n.9. NMFS, however, has concluded that while the EA overestimates exposures in some instances and underestimates exposures in others, on the whole it represents a "reasonable approximation" of the number of exposures that will result from the exercises. E.R. 1070.[13] The Navy's suggestion that

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[12] Petitioners argue, Br. 45 n.9, that the behavioral disruptions estimated in the EA would not result in an abandonment or significant alteration in behavior (*i.e.*, Level B harassment, J.A. 161, 223-24). But the EA's modeling of Level B exposures was based on the 173 decibel standard for Level B harassment established by NMFS, 71 Fed. Reg. 38710, 38727 (2006), and the EA states that the Navy is "requesting harassment authorization at the NMFS-required level." E.R. 220. Moreover, there is "compelling evidence" that marine mammals are significantly affected by sonar even at levels below the 173 decibel threshold. *OMI*, 546 F.Supp.2d at 965, 973-75.

[13] Nevertheless, the Navy's claim that NEPA's "central purpose...was fully served" by the preparation of its "293-page" EA, Br. 49, is wrong. As the district court held, the Navy's document is inadequate even as an EA (let alone an EIS) due in part to the Navy's "failure to study and analyze the potential for...cumulative impacts." App. 210a-11a. The EA was also held deficient in its failure to adequately analyze reasonable alternatives, including mitigation alternatives. App. 207-10a. Finally, the EA was not made available for public comment as a draft, as NEPA requires for actions significantly affecting the environment. *Robertson*, 490 U.S. at 349 (central purpose of

"the vast majority" of the takes predicted in the EA "would be avoided" through its proposed mitigation measures, Br. 45 n.9, is also contradicted by the Navy's mitigation records from prior exercises, which reflect the difficulty in visually spotting marine mammals from fast-moving vessels, and by its plans to operate at night and during other periods of low visibility, when sighting rates for marine mammals are "severely reduce[d]." App. 64a n.50 (finding SOCAL measures would prevent only a small fraction of takes); S.E.R. 349 (Navy estimate of 5% visual detection rate), 350, 355; J.A. 482-83, 585-86.

The Navy further argues that the EA's prediction of 548 permanent injuries for beaked whales is based on flawed assumptions in the Navy's own analysis. Br. 44-45. But as the Ninth Circuit observed, the Navy's pre-litigation decision to categorize those takes as permanent injuries is supported by "ample evidence indicating that beaked whales are particularly vulnerable to MFA sonar," App. 62a, and the EA itself concludes that beaked whales are to be "assessed differently from other species to account for factors that may have contributed to prior beaked whale strandings." J.A. 173-74.

Finally, the Navy contends that its 40-year history of operation in SOCAL proves, contrary to the consensus predictions of scientists and its own EA, that the planned sonar use is unlikely to harm

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NEPA is "guarantee[ing] that the relevant information will be made available to the larger audience that may also play a role in both the decision-making process and the implementation of that decision"). The mere heft of a document cannot substitute for analytical soundness and public disclosure. *Anderson v. Evans*, 314 F.3d 1006, 1023 (9th Cir. 2002).

marine mammals. Br. 43. However, as the district court found, NMFS's own stock assessments for the impacted beaked whale populations concede that injuries and mortalities would *rarely be documented* given the offshore location of the Navy's exercises and the "low probability that an injured or dead beaked whale would strand." App. 22a, 76a, 204a; J.A. 728; S.E.R.2 923. Indeed, NMFS scientists have determined it highly improbable that even a catastrophic decline of 5% per year over 15 years would be detected in California beaked whale populations—or in nearly any other California stock of marine mammals—given the lack of adequate survey effort. J.A. 747-55; App 23a. Similarly, the Navy's argument that strandings cannot occur unless each of five separate factors (including surface-ducting conditions and steep bathymetry) is present, Br. 42, is specious. This claim has been rejected by the Ninth Circuit and publicly repudiated by NMFS, which concluded that the presence of any one of these factors may increase the likelihood of injury and death. *See* 71 Fed. Reg. 38718-19 (2006); App. 68-69a.

2. The Navy also argues that Respondents will suffer no irreparable injury unless the substantial harm that the Navy's MFA sonar training will likely cause to marine mammals damages entire species. The Navy cites *Fund for Animals v. Frizzell*, 530 F.2d 982 (D.C. Cir. 1975), for the proposition that irreparable harm cannot be established absent evidence of "irretrievabl[e] damage [to] the species." *Id.* at 987. That case, however, involved the permitted hunting of abundant game birds whose populations were actively managed by wildlife agencies to allow significant takes every year. *Id.* at

986. The plaintiffs "made only non-specific claims of 'the destruction and loss of wildlife,'" *id.* at 987, and apparently failed to submit any specific evidence as to harms they would suffer aside from harm to their general interest in "the protection of animals and wildlife." *Fund for Animals v. Frizzell*, 402 F.Supp. 35, 36 n.1 (D.D.C. 1975). The case has no application where, as here, plaintiffs have submitted declarations asserting specific, personal interests that would be harmed by the proposed action. *Cf. Davis v. Mineta*, 302 F.3d 1104, 1115 (10th Cir. 2002) (finding irreparable harm where plaintiffs made "a specific showing that the environmental harm results in irreparable injury to their specific environmental interests"). *Frizzell* has been especially discredited where affected animals are threatened or endangered. *See Greater Yellowstone Coalition v. Flowers*, 321 F.3d 1250, 1256-58 (10th Cir. 2003) (rejecting species-level harm argument where animals "belong to a threatened species").[14]

Indeed, courts routinely recognize that harm to less than an entire species is irreparable and justifies injunctive relief when appropriately balanced against competing interests. *Nat'l Audubon Soc'y v. Navy*, 422 F.3d 174, 183 (4th Cir. 2005) (affirming portions of injunction necessary to prevent harm to birdwatchers where actions might "reduc[e] [birds'] feeding and resting times, alter their behavior, hinder their migration, and decrease their populations");

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[14] The only other case cited by the Navy is *Water Keeper Alliance v. U.S. Dep't of Def.*, 271 F.3d 21, 34 (1st Cir. 2001), which merely held that a district court *did not abuse its discretion* in finding that the death of a single endangered species failed to create the potential for irreparable harm.

Nat'l Parks & Conservation Ass'n. v. Babbitt, 241 F.3d 722, 732 (9th Cir. 2001) (finding irreparable harm from increased ship traffic that would cause "adverse behavioral responses" in animals viewed by park visitors); *Sierra Club v. Marsh*, 872 F.2d 497, 500 (1st Cir. 1989) (issuing injunction based on potential impacts to environment without evidence of population-threatening harm); *Fund for Econ. Trends v. Heckler*, 756 F.2d 143 (D.C. Cir. 1985) (affirming same); *Humane Soc'y v. Gutierrez*, 523 F.3d 990, 991 (9th Cir. 2008) (finding irreparable harm from lethal takes of individual sea lions); *Anglers of the Au Sable v. U.S. Forest Serv.*, 402 F. Supp. 2d 826, 837 (E.D. Mich. 2005) (enjoining drilling project where "wildlife patterns would be altered," "predator-prey relationships would be changed," "habitat[s] would be destroyed," and "recreational opportunities would be lost"). This Court has itself recognized that most environmental injuries will not be "adequately remedied by money damages" and are often "permanent or at least of long duration, *i.e.*, irreparable." *Amoco*, 480 U.S. at 545.

Respondents' declarants include a docent who takes weekly whale watching trips on the SOCAL range; sailors and others who regularly swim with and view the very populations of animals that would be impacted by the SOCAL exercises; and one of the world's leading undersea photographers, who regularly dives, works, and recreates in these waters. J.A. 390-91 (docent); J.A. 386-87, 403-05, 408, 411-12, 427-28, 430-31, 433-35, 437-38 (sailors, divers, kayakers, whale watchers); J.A. 398-99 (Jean-Michel Cousteau). Another declarant is a volunteer marine mammal rescuer who has an aesthetic and vocational interest in reducing the number of injured marine mammals she

witnesses. J.A. 446-47. The district court's factual finding that these and Respondents' other declarants, who have wide-ranging connections to the affected populations of animals, would be irreparably harmed by the debilitating injuries and broad-scale disruptions caused by the Navy's sonar exercises was not clearly erroneous, especially given the record evidence that past sonar use has resulted in deaths and debilitating injuries, as well as habitat displacement and significant declines in the observation of commonly seen populations over entire exercise areas. J.A. 390-91, 398-99, 423-24, 445-47, 473-74, 582-83, 590-91, 598-603, 652-723, 756-79; S.E.R.2 232-33. *See, e.g., Nat'l Audubon Soc'y*, 422 F.3d at 183; *Babbitt*, 241 F.3d at 732.

Finally, even if a demonstration of species-level harm were required, the Ninth Circuit specifically determined that marine mammals would be adversely impacted by the SOCAL exercises at the species or stock level. App. 77a. As just two examples, the Navy's own EA estimated that the SOCAL exercises would cause takes of up to 25 percent of the eastern Pacific population of endangered blue whales, and 436 Level A harassments of Cuvier's beaked whales out of an entire west-coast population of as few as 1,121 members. J.A. 223-24; E.R. 341-43; App. 19a; S.E.R.2 927.

3. Because the district court's finding of a "near certainty" of irreparable harm is plainly supported by the record, this is not a proper case to decide whether, and under what circumstances, injunctive relief may issue on a showing of a "possibility" of irreparable harm.

Nonetheless, if the Court were to reach the issue, the Ninth Circuit's sliding-scale irreparable harm standard is entirely consistent with this Court's precedents and with the rule in other circuits. *See Brown v. Choate*, 411 U.S. 452, 456 (1973) (affirming a preliminary injunction after determining that the district court "properly addressed itself to. . .the possibility that irreparable injury would have resulted, absent interlocutory relief"); *Nat'l Wildlife Fed'n v. Burford*, 835 F.2d 305, 323 (D.C. Cir. 1987) (affirming preliminary injunction where challenged actions "could lead" to irreparable injury); *Register.com, Inc. v. Verio, Inc.*, 356 F.3d 393, 427 (2d Cir. 2004) (approving decision affirming a preliminary injunction upon a showing of a "possibility of irreparable harm"); *Carey v. Klutznick*, 637 F.2d 834, 837 (2d Cir. 1980) ("[E]very irreparable injury is merely a possibility until it is actual and can no longer be averted. Real and imminent, not remote, irreparable harm is what must be demonstrated..."); *Indust. Elect. Corp. v. Cline*, 330 F.2d 480, 483 (3d Cir. 1964) (preliminary injunction may issue upon a showing that irreparable injury would "possibly result" if relief is denied); *Blackwelder Furniture Co. v. Seilig Mfg. Co.*, 550 F.2d 189, 196 (4th Cir. 1977) ("The importance of probability of success increases as the probability of irreparable injury diminishes; and where the latter may be characterized as simply 'possible,' the former can be decisive."); *Martinez v. Mathews*, 544 F.2d 1233, 1243 (5th Cir. 1976) (preliminary injunctive relief requires showing "the possibility of irreparable harm"); *Tri-State Generation and Transmission Ass'n, Inc. v. Shoshone River Power, Inc.*, 805 F.2d 351, 356 (10th Cir. 1986) ("[I]n deciding whether a preliminary injunction should issue, we are only examining the possible

course of events between the present time and the conclusion of the underlying litigation.").[15]

The Navy simply misreads cases and cherry-picks dicta to claim otherwise. For example, although *Doran v. Salem IMM, Inc.*, 422 U.S. 922, 932 (1975), used the phrase "will suffer" in a general recitation of the elements required for granting a preliminary injunction, this Court upheld the district court's grant of a preliminary injunction on the ground that there was a *possibility* that the respondents would become bankrupt absent injunctive relief. Thus, *Doran* provides no support for the Navy's position and is in accord with *Brown* and the Ninth Circuit. The Navy's other cases are also easily distinguished. *See, e.g., Grupo Mexicano de Desarrollo, S.A. v. Alliance Bond Fund, Inc.*, 527 U.S. 308, 340 (1999) (Ginsburg, J., concurring in part and dissenting) (stating requirements for equitable relief, but not addressing the applicable irreparable injury standard); *Amoco*, 480 U.S. at 545, 546 n.12 (same); *In Re DeLorean Motor Co.*, 775 F.2d 1223, 1229 (6th Cir. 1985) (same).

The broad consensus in favor of a sliding-scale approach is especially sensible in the context of NEPA, the purpose of which is to "insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which *may have an impact* on man's environment." 42

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[15] Importantly, the Ninth Circuit, like other circuits, *rejects* claims of irreparable harm that are merely "speculative," "remote," "tenuous," "insignificant," or "insubstantial." *See Paramount Land Co. v. Cal. Pistachio Comm'n*, 491 F.3d 1003, 1012 (9th Cir. 2007) (vacating preliminary injunction); *Goldie's Bookstore v. Superior Court*, 739 F.2d 466, 472 (9th Cir. 1984) ("Speculative injury does not constitute irreparable injury.").

U.S.C. § 4332(emphasis added). Stripping courts of discretion to issue injunctions where litigants show a possibility of harm would, perversely, allow federal agencies to proceed with projects in precisely those cases where an EIS is a precondition to action. *See, e.g., Babbitt*, 241 F.3d at 737-38 ("Where an EIS is required, allowing a potentially environmentally damaging project to proceed prior to its preparation runs contrary to the very purpose of the statutory requirement.").

C. The District Court Did Not Abuse Its Discretion in Balancing the Equities

Finally, the Navy argues that the lower court abused its discretion in balancing the hardships of the parties and the public interest. The decision of a district court to grant a preliminary injunction is reviewed for an abuse of discretion. *See Ashcroft v. ACLU*, 542 U.S. 656, 660 (2004); *Pharmaceutical Research & Mfgs. of Am. v. Walsh*, 538 U.S. 644, 661 (2003). The district court did not abuse its discretion in this case.

"The essence of equity jurisdiction has been the power of the [court] to do equity and to mould each decree to the necessities of the particular case. Flexibility rather than rigidity has distinguished it." *Hecht Co. v. Bowles*, 321 U.S. 321, 329 (1944). The Navy attempts to paint the district court's injunction as one that elevated the interests of marine mammals and Respondents above those of the Navy and the public interest in a trained military. Not so. Although the district court's first injunction would have prohibited the use of MFA sonar in the SOCAL exercises pending the Navy's compliance with NEPA, the tailored injunction that the district court entered

following the first appeal to the Ninth Circuit was carefully crafted to balance these competing interests and, above all else, to ensure that the Navy could train and certify its strike groups. *See* App. 35a, 103a-04a. Indeed, the district court accepted without question the Navy's contention that the use of MFA sonar is essential to national security and the United States' ability to conduct warfare operations and thus permitted training to go forward that, even with the required mitigation measures in place, threatens to injure and kill marine mammals. App. 78a, 103a-04a. The district court most certainly did not ignore the magnitude of potential harm to the Navy or to the public interest if the Navy could not train.

The Navy also argues that the district court abused its discretion in failing to defer to the views of the Chief of Naval Operations ("CNO") and several Navy officers as expressed in declarations prepared specifically for this litigation regarding the effectiveness of naval training under the required mitigation measures. The Navy is wrong. The district court paid substantial deference to the Navy regarding not only the importance of MFA sonar training to national security, but also the impact of particular mitigation measures on that training. Indeed, the district court specifically *rejected* several mitigation measures proposed by Respondents in deference to the Navy. App. 35a, 103-104a. Deference, however, does not mean suspension of judgment. The district court's determination that the Navy could conduct its training exercises under the challenged mitigation measures is well-supported by the record.

First, with respect to the 6 decibel power-down requirement, the Navy argues Br. 53-54, that the district court did not adequately defer to a Navy declaration that "[t]raining in surface-ducting conditions is critical to effective training because such conditions alter sonar transmissions and submarines take advantage of these sound distortions." App. 333a; *see also* App. 299a-300a; Br. 13. Because surface-ducting conditions occur only rarely in the waters in SOCAL—a fact the Navy concedes—the suggestion that testing under those conditions is a "critical" aspect of the SOCAL exercises is not credible. Indeed, such assertions are belied by the fact that the Navy trained and certified its troops during 8 SOCAL exercises despite the complete absence of such conditions. App. 86a. In any event, the Navy conceded at oral argument before the Ninth Circuit that it *can* certify strike groups notwithstanding the inability to train in surface-ducting conditions. App. 80a n.61. This admission forecloses any argument that the district court abused its discretion in failing to afford sufficient deference to Navy declarations. *See id.*

Second, with respect to the 2,200 yard safety zone, the Navy argues that the district court should have deferred to the judgment of the CNO and other naval officers that the shutdown requirement would "unacceptabl[y] risk" training and national security. Br. 51. Importantly, neither the CNO nor the other naval officers asserted that mandatory shutdowns would preclude the effective training and certification of strike groups; in fact, the Navy itself proposed mitigation measures to the district court that involve the mandatory cessation of sonar transmissions if a marine mammal comes within a specified distance of

the sonar source. App. 103a. Rather, the CNO and other naval officers declared that the district court's selection of a safety zone larger than that proposed by the Navy would "exponentially increase[] the number of times that a ship will have to shut down active sonar" and result in "constant stopping and starting of [MFA sonar], leading to exercise event disruption." App. 332a; *see* App. 344a-345a, 356a.

The district court did not dismiss these declarations out of hand, but instead found that these litigation pronouncements were directly contradicted by the Navy's own record of over a year's worth of COMPTUEX and JTFEX training in SOCAL. That record shows that a 2,000 yard expansion would only minimally (not exponentially) increase the number of shutdowns and would not result in constant stopping and starting, with the Navy having to shut down or power down only approximately once more per exercise. App. 84a.[16] The Navy presented no facts

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[16] As the Court of Appeals observed, the Navy's after-action reports indicate that it would have had to secure its sonar "at most" 21 additional times during an entire year of training on the SOCAL range. App. 83a. Petitioners challenge this finding, as they did below, by claiming that 15 of Navy's reported shutdowns occurred "voluntarily," when marine mammals were sighted beyond the official shutdown distance of 200 meters, and therefore must have occurred during "tactically insignificant" periods of an exercise. Br. 52. As the appeals court found, however, the Navy's reports do not support this contention: on the contrary, they indicate that a number of these shut-downs, on *both* sides of the 200 meter distance, occurred with an exercise target in the vicinity. App. 84a; Pet. C.A. Emergency Mot. for Stay Pending Appeal ("Navy Stay Mot."), Ex. 16, Att. C at 14, Att. D at 11. Although the Navy further argues that it "continued to employ MFA sonar in 72% of [its] encounters with marine mammals between 200 and 2200 yards," Br. 52, this characterization omits the fact that, under

suggesting that the few additional shutdowns and interruptions would have any meaningful impact on the SOCAL exercises, let alone prevent the Navy from training and certifying its strike groups. Thus, the Navy's argument boils down to the novel contention that the district court was required to accept the Navy's litigation pronouncements regarding the predicted frequency of shutdowns under a 2,200 yard safety zone notwithstanding directly contradictory data from the Navy's own files.[17]

The law does not require (or even permit) such a complete abdication of the district court's fact-finding role. As this Court has recently and repeatedly affirmed, courts perform a vital function when they review claims of the military about needs and constraints. *See Boumediene v. Bush*, 128 S. Ct. 2229 (2008); *Duncan v. Kahanamoku*, 327 U.S. 304, 322-23 (1946). Even in cases involving significant national security concerns, "deference is not equivalent to acquiescence" and courts have a duty to

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its own mitigation protocol, the Navy powered-down sonar by 75 percent or more in the majority of these cases—an action that it has elsewhere claimed (as it does with the shutdown condition at issue in this case, App. 84a) is detrimental to training. Br. 53; Navy Stay Mot., Ex. 16, Att. E at 6.

[17] The Navy relied almost exclusively on declarations and statements prepared in the course of litigation. The district court was well within its discretion in crediting the voluminous substantive evidence submitted by Respondents of the Navy's actual past practices and statements predating the litigation, and in finding, with respect to the measures that it imposed, that the evidence in the record outweighed the Navy's assertions of harm. *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 212-13 (1988); *Burger v. Kemp*, 483 U.S. 776, 806 n.11 (1987); *District of Columbia v. Murphy*, 314 U.S. 441, 456 (1941).

independently assess such claims and weigh them against competing interests. *Campbell v. U.S. Dep't of Justice*, 164 F.3d 20, 30 (D.C. Cir. 1998); *Coldiron v. U.S. Dep't of Justice*, 310 F. Supp. 2d 44, 53 (D.D.C. 2004). Judicial review of Executive assertions of harm takes on even greater importance in turbulent times when the balance of powers is most vulnerable to overreaching by the Executive. *See Duncan*, 327 U.S. at 322-23; *Hamdan v. Rumsfeld*, 548 U.S. 557, 636-37 (2006) (Kennedy, J., concurring). The district court did not abuse its discretion in declining to accept the Navy's litigation pronouncements at face value and instead examining the Navy's own past practices and other pre-litigation statements and conduct.[18]

Although that could be the end of the analysis, the Ninth Circuit went further to eliminate even the possibility, however remote, that the public interest would be harmed as a consequence of the district court's injunction. On February 29, 2008, the same date it filed its decision affirming the district court's preliminary injunction, the Ninth Circuit *sua sponte* modified the injunction so that: (1) the Navy need not

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[18] The President's invocation of an exemption to the Coastal Zone Management Act ("CZMA") does not alter the calculus. The CZMA exemption was based on a finding that "the COMPTUEX and JTFEX, including the use of mid-frequency active sonar in these exercises, are in the paramount interest of the United States." App. 232a. The courts below found that the Navy could in fact conduct its sonar training under the terms of the injunction, and the Navy has been training and certifying its strike groups under the terms of the injunction. The conduct of these exercises and the use of MFA sonar therein is thus not in doubt, and the Ninth Circuit has provided a mechanism for the Navy to petition for emergency relief should unexpected difficulties arise.

comply with the 2,200 yard safety zone at critical points in the exercises, but can instead employ the 1,000 meter, 500 meter, and 200 meter safety zones that the Navy advocated in the district court; and (2) the Navy need only reduce the MFA sonar level during significant surface-ducting conditions if marine mammals are detected within a certain distance from the sonar source. App. 93a-94a. These modifications remain in effect, and enforcement of the more stringent safety-zone and power-down requirements in the unmodified injunction has been stayed pending final disposition by this Court. App. 95a.

Consequently, even if this Court were to hold that the district court did not afford adequate deference to the views of the Navy declarants, there would be no basis for vacating the injunction *as modified* by the Ninth Circuit. The Navy has never argued that the modified injunction prevents it from effectively training and certifying its strike groups or otherwise poses a risk to national security, and it has now trained under the terms of that modified injunction since February 2008. At a minimum, therefore, this Court should affirm the preliminary injunction under the terms of the Ninth Circuit's stay order for the remainder of the SOCAL exercises that are the focus of this case.

CONCLUSION

The judgment of the court of appeals should be affirmed.

Respectfully submitted,

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RESPONDENT'S BRIEF

12

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Supreme Court of the United States

DONALD C. WINTER,
SECRETARY OF THE NAVY, ET AL.,

Petitioners,

v.

NATURAL RESOURCES
DEFENSE COUNCIL, INC. ET AL.,

Respondents.

On Writ Of Certiorari To The Court Of Appeals For The Ninth Circuit

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CORPORATE DISCLOSURE STATEMENT

Pursuant to Supreme Court Rule 29.6, respondent California Coastal Commission states that it is a state governmental agency created pursuant to state law (CA Pub. Resources Code § 30300) and not a public, private or nonprofit corporation.

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STATEMENT

According to the Navy's own assessment, its training exercises "will cause widespread harm to nearly thirty species of marine mammals, including five species of endangered species, and may cause permanent death or injury." App. 163a. Congress in the Marine Mammal Protection Act (MMPA), however, authorized the Secretary of Defense to exempt certain military activities from the MMPA despite their impact on marine mammals. 16 U.S.C. § 1371(f). One might reasonably expect that Congress, before allowing the Navy to implement this dramatic action, would demand full compliance with the National Environmental Policy Act (NEPA) because that would insure that the Navy's implementation of the Secretary's decision to jeopardize marine mammals would be fully informed. As this brief demonstrates, Congress did not excuse the Navy from compliance with NEPA, and the district court must retain equitable discretion to protect NEPA's important public policy of analyzing the environmental consequences of actions *before* they occur.

Consistent with this policy, the district court issued a detailed, well-conceived preliminary injunction that allowed the Navy to continue its routine training exercises using mitigation measures to protect marine mammals from the harmful effects of mid-frequency active sonar until the Navy fully complies with NEPA. The district court's findings are not clearly erroneous and the court did not abuse its discretion. The Court of Appeals for the Ninth Circuit

properly affirmed the district court order. The courts below reached a fair and well-reasoned balance between the public's interest in a properly trained Navy and the public's interest in protecting marine mammals. This Court should affirm.

With regard to the first question presented, respondent California Coastal Commission (Commission) defers to respondents Natural Resources Defense Council, Inc., International Fund for Animal Welfare, Cetacean Society International, League for Coastal Protection, Ocean Futures Society, and Jean-Michel Cousteau. The Commission agrees with the arguments in their merits brief. The Commission addresses only the second question presented regarding the propriety of the preliminary injunction issued by the district court and affirmed by the court of appeals.

1. California's natural resources include marine mammals and their protection is vitally important to the State. The Commission is the state agency responsible for managing California's coastal zone, including implementing the policies of the California Coastal Act of 1976 requiring protection of marine resources, water quality and open coastal waters. CA Pub. Resources Code, §§ 30230, 30231, 30233, 30330. The Commission also has authority under the federal Coastal Zone Management Act (CZMA; 16 U.S.C. § 1451-1465) to review federal activities for consistency with California's federally approved coastal management program which includes the California Coastal Act of 1976. CA Pub. Resources Code,

§ 30330; 16 U.S.C. § 1456(c)(1)(A) and (C); *American Petroleum Institute v. Knecht*, 456 F.Supp. 889, 893-894 (C.D. Cal. 1978).

2. Pursuant to the CZMA, the Navy submitted a consistency determination to the Commission for routine training exercises off the coast of southern California. 16 U.S.C. § 1456(c)(1)(A) and (C). The Navy determined that a component of those exercises, the use of mid-frequency active (MFA) sonar, would not affect California's coastal zone. The Commission disagreed, finding that many of the species potentially affected by use of MFA sonar in the proposed training activities spend some portions of their life cycles within coastal waters, including marine species that swim in and out of the coastal zone. JA 276. Relying on numerous scientific studies and its prior experience with the Navy's use of sonar, the Commission conditionally concurred in the Navy's consistency determination with the requirement that the Navy incorporate additional monitoring and mitigation measures. JA 304-305. The Commission found that, only as conditioned, would the Navy's training exercises be consistent with the applicable marine resource, water quality and open coastal waters policies of California's coastal management program. JA 306. With regard to the use of MFA sonar, these conditions included *inter alia* a larger safety zone (requiring that the Navy either cease sonar transmission when a marine mammal is within 2 km as the Navy agreed to do in an earlier sonar operation or provide the Commission with information showing sonar intensity

and attenuation rates to a specified level of protection) and powering down the sonar when certain conditions are present (surface ducting which allows sound energy to travel farther). JA 317-325. The Navy refused to accept the Commission's conditions.[1]

3. Thereafter, on February 7, 2007 the Navy released its environmental assessment (EA) for the training exercises and its finding of no significant impact. JA 107-227. On March 22, 2007 the Commission filed a lawsuit against the Navy regarding its training exercises. *California Coastal Commission v. United States Department of the Navy et al.*, United States District Court, Central District of California, CV 07-01899 FMC (FMOx).[2] On that same day, respondents Natural Resources Defense Council, Inc., International Fund for Animal Welfare, Cetacean Society International, League for Coastal Protection, Ocean Futures Society, and Jean-Michel Cousteau (collectively NRDC) filed this litigation. On August 7, 2007, the district court partially granted NRDC's motion for a preliminary injunction, finding that

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[1] The Commission and the Navy were in agreement with regard to most of the Commission's consistency conditions with the exception of the proper safety zone and powering down when surface ducting conditions are present. Those two conditions were also included in the district court's modified preliminary injunction and remain the mitigation measures in contention. Pet. Brief at 51-54.

[2] The Commission's case has been stayed pending resolution of the appeal in this case. The Commission intervened on appeal as an appellee in this case.

NRDC demonstrated a probability of success on the merits and the possibility of irreparable harm. App. 195a-218a. The district court found, based on the numerous scientific studies, declarations, reports and other evidence before it, plaintiffs established to a near certainty that the use of MFA sonar will cause irreparable injury to the environment and to NRDC. App. 217a. The district court's decision was based in large part on the Navy's own EA which concluded that its actions will result in 170,000 instances of Level B harassment, including 8,000 temporary threshold shift exposures and 466 cases of permanent injury to beaked and ziphiid whales. App. 204a. The district court found the Navy's evidence of predicted injury to 436 Cuvier's beaked whales was especially significant in light of the National Oceanic and Atmospheric Administration's (NOAA) estimate that there are as few as 1,211 such whales remaining off the entire west coast. App. 204a.

4. On August 16, 2007 the Navy filed an appeal and an emergency motion for stay. JA 1-2. On August 21, 2007 the Commission filed a motion to intervene on appeal and an opposition to the stay. JA 2. On August 31, 2007 the motions panel of the Court of Appeals for the Ninth Circuit granted the Navy's emergency motion to stay the preliminary injunction. App. 175a-194a. On October 25, 2007 the court of appeals granted the Commission's motion to intervene. JA 7. On November 13, 2007 the merits panel found plaintiffs had met the necessary burden of proof to demonstrate that some form of preliminary

injunctive relief was appropriate, had shown a strong likelihood of success on the merits as well as the possibility of irreparable injury, had shown the balance of hardships tipped in their favor and had shown the public interest would be advanced by an injunction that required adequate mitigation measures. App. 172a-173a. However, the panel found the district court had not adequately explained why a broad injunction was necessary. App. 173a. The court of appeals remanded the case to the district court with directions to narrow its injunction so as to provide mitigation conditions under which the Navy could conduct its training. App. 174a.

5. On remand, the district court considered the parties' briefs on proposed mitigation conditions and toured a Navy vessel to improve its understanding of the Navy's sonar training procedures and the feasibility of the proposed mitigation measures. App. 150a. On January 3, 2008 the district court issued a preliminary injunction that allowed the Navy to train using MFA sonar but subject to seven carefully tailored mitigation measures. App. 164a-170a. The district court again found that based on the numerous scientific studies, declarations, reports and other evidence submitted, plaintiffs demonstrated to a near certainty that use of MFA sonar during the planned training exercises "will cause irreparable harm to the environment and plaintiffs." App. 164a. The district court further found that the balance of hardships tipped in favor of issuing an injunction and that the harm to the environment, plaintiffs and the public

interest outweighed the harm that the Navy would incur or the public interest would suffer. App. 164a. The district court did not accept all of NRDC's arguments and took the Navy's concerns into consideration in crafting the mitigation measures. App. 103a-104a; 165a-170a. On January 10, 2008, on its own initiative, the district court further modified the mitigation measures to accommodate the Navy. App. 144a-149a.

6. The Navy then sought and obtained a presidential exemption from the CZMA (App. 231a-232a) and emergency authorization from the Council on Environmental Quality (CEQ) for alternative NEPA arrangements. App. 233a-248a. On January 16, 2008 the Navy moved the court of appeals ex parte for an order vacating the preliminary injunction or staying it pending appeal. JA 11. The court of appeals remanded to allow the district court in the first instance to consider the application. JA 12. The district court denied the Navy's application, finding the CEQ's action beyond the scope of its regulation and invalid; therefore the Navy was not exempt from compliance with NEPA. App. 97a. On February 27, 2008, the court of appeals heard oral argument and on February 29, 2008, the court of appeals issued a lengthy opinion affirming the district court's issuance of the modified preliminary injunction. App. 1a-90a. The court of appeals held the district court neither relied on erroneous legal premises nor abused its discretion. App. 90a.

SUMMARY OF RESPONDENT'S ARGUMENT

The question presented is whether the district court's injunction was consistent with equitable principles for issuing preliminary injunctive relief.

Petitioners contend that in amending the MMPA, Congress struck a balance between the military's training needs and marine mammal protection, and thus the district court lacked discretion to issue the injunction. However, unless Congress clearly provides otherwise, federal courts retain their traditional discretion acting as courts of equity to fashion injunctive relief. Here, Congress has not issued a clear and valid legislative command that displaces the court's traditional equitable discretion to issue injunctive relief with regard to NEPA.

While Congress authorized the Navy's training exercises to be exempted from the requirements of the MMPA, it did not preclude the district court from requiring the Navy to comply with NEPA. The MMPA and NEPA serve different purposes. The MMPA exemption allowed the Navy's activities to be exempt from the prohibition on taking marine mammals. In contrast, NEPA requires the Navy to fully consider the environmental consequences of its actions before they occur. Congress, in enacting the MMPA exemption, did not either expressly or by implication alter the Navy's obligation to comply with NEPA; thus, the district court was not precluded from exercising its equitable jurisdiction with regard to NEPA.

Where there are tensions between NEPA and other statutes, every federal agency must comply with NEPA unless there is a statutory conflict with the agency's authorizing legislation that expressly prohibits or makes full compliance with NEPA impossible. The MMPA neither prohibits nor makes NEPA compliance impossible. Further, Congress could have exempted the Navy from NEPA compliance but it did not. This Court assumes Congress knows about existing law pertinent to the legislation it enacts. This assumption is especially forceful where Congress provides for an exemption from one body of laws but not from others.

The courts below applied the proper standard for issuance of a preliminary injunction. Following this Court's precedent, the district court found there was sufficient likelihood of environmental injury to support a finding of irreparable injury. Specifically, the court determined that NRDC demonstrated a strong likelihood of success on the merits of their NEPA claim, that the Navy's own evidence established to a near certainty that the use of MFA sonar will cause irreparable injury to the environment and to plaintiffs, that the balance of hardships tipped in favor of granting an injunction and that the public interest outweighed the harm that the Navy would incur or the public interest would suffer if the Navy was prevented from using MFA sonar, absent the use of effective mitigation measures.

Petitioners argue that the court of appeals applied the wrong standard for irreparable injury.

Contrary to petitioners' argument, the appellate court did not use a "mere" possibility of injury standard; it stated correctly that, in the district court, NRDC had the burden of demonstrating the "possibility of irreparable injury." More importantly, petitioners' argument is misdirected. The *district court* applies this standard, which the appellate court reviews for abuse of discretion. The district court here found NRDC had demonstrated to a near certainty that irreparable injury would occur. The court of appeals properly reviewed the district court's order for abuse of discretion.

In asserting that the courts below erroneously found the possibility of irreparable injury, petitioners downplay the injury to marine mammals predicted in the Navy's own EA. The district court found the EA contained evidence that the training exercises will cause 170,000 Level B harassment exposures and 466 permanent injuries to marine mammals, including five endangered species. Contrary to petitioners' arguments, the court below correctly focused on irreparable injury to the environment. Such a focus is entirely appropriate in NEPA litigation. Petitioners' claims miss the whole point of a preliminary injunction which is to prevent the judicial process from being rendered futile by defendant's action. In environmental litigation, the injunction serves to prevent the defendant from causing environmental damage that cannot be undone. The district court did not abuse its discretion in considering injury to the environment.

The district court also properly balanced the relative hardships and public interest, finding the balance tipped in favor of issuing the injunction. The public has an interest in both a well-trained military and in protection of natural resources. The harm to the Navy was fully considered by the courts below. The courts also considered the Navy's admission that it had certified strike groups despite a lack of certain kinds of training and the fact that the Navy did not state it would cease training under the mitigated injunction. The courts did not err in declining to defer to the executive branch. They properly recognized the importance of national security but found that the armed forces must still comply with the law when conducting training. The district court carefully balanced the Navy's needs against the harm to the environment. It did not accept NRDC's sweeping mitigation measures, did accept many of the Navy's proposals regarding the mitigation to be imposed and carefully crafted the preliminary injunction to allow the Navy to train while still protecting marine mammals. The district court, sitting in equity, acted properly in issuing the preliminary injunction.

Strong public policy considerations support affirming the courts below. Absent a clear and unequivocal mandate from Congress to preclude the courts from exercising their power in equity, interference with the courts' traditional equitable authority will not be lightly assumed. Here, in the absence of such a mandate, the district court retained the equitable discretion to allow the Navy to train using

mitigation measures to protect California's coastal resources. Further, the Commission should not have to wait until injury to a species at a population level has occurred before it can seek judicial intervention to protect California's valuable coastal resources. Additionally, this Court should reject petitioners' argument that plaintiffs must proffer substantial proof and make a clear showing that injunctive relief is necessary to prevent irreparable injury. Where the injury sought to be enjoined is to a state's natural resources, a showing of the possibility of irreparable injury to those natural resources is sufficient.

Petitioners are not without recourse. If the mitigation measures render the Navy unable to certify sufficient naval forces to provide for the national defense, the Navy may return to the district court and request relief.

The Court should affirm the judgment of the court of appeals upholding the district court's issuance of the carefully tailored preliminary injunction.

ARGUMENT

I. THE DISTRICT COURT DID NOT ABUSE ITS DISCRETION IN ISSUING THE PRELIMINARY INJUNCTION

NRDC addressed the first question presented by demonstrating in its merits brief that the district court properly determined that "emergency circumstances" did not exist and that the CEQ incorrectly

invoked this limited exception contained in 40 C.F.R. § 1506.11. The second question presented is whether the district court's injunction was consistent with established equitable principles for issuing preliminary injunctive relief.

Petitioners address this question in three separate arguments. They contend that (a) the district court lacked discretion to issue injunctive relief because Congress determined in the MMPA that the equitable balance between marine mammal protection and military activity must be struck in favor of military readiness when the Secretary of Defense exempts the exercise from MMPA; (b) the preliminary injunction was improperly based on the "mere possibility" of irreparable harm to respondents' interest; and (c) the district court's balancing of interests "dramatically diverges from established principles" and lacks support in the record. Pet. Brief at 34. None of these arguments has merit.

A. The District Court Had The Discretion To Issue Injunctive Relief.

District courts, acting as courts of equity, have discretion unless a statute clearly provides otherwise. *United States v. Oakland Cannibis Buyers' Coop.*, 532 U.S. 483, 496 (2001). Unless a statute in so many words, or by a necessary and inescapable inference, restricts the court's equity jurisdiction, the full scope of that jurisdiction is to be recognized and applied. *Porter v. Warner Holding Co.*, 328 U.S. 395, 398

(1946). This Court will not lightly assume that Congress has intended to depart from established principles involving the exercise of the courts' discretion. *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 313 (1982). Here, Congress did not – either in so many words or by a necessary and inescapable inference – restrict the district court's ability to exercise its equitable powers to compel compliance with NEPA.

1. Congress, In Amending The MMPA, Did Not Give A Clear Legislative Command Regarding NEPA.

Petitioners argue that because Congress amended the MMPA to allow the Navy to be exempt from its provisions, Congress necessarily precluded the district court from exercising its discretion to compel compliance with NEPA. However, nothing in Congress's amendment of the MMPA gave a clear legislative command to alter the district court's equitable powers with regard to NEPA.

The MMPA generally prohibits the taking of marine mammals by harassment or killing without a properly issued permit. 16 U.S.C. §§ 1362-1374. Violation of the MMPA is punishable by civil liability for penalties and other enforcement mechanisms. 16 U.S.C §§ 1375-1377. Congress amended the MMPA to allow the Secretary of Defense to exempt Navy

activities from the prohibitions on taking marine mammals.[3]

As petitioners correctly point out, the Secretary of Defense has exempted the Navy's training exercises from the MMPA. App. 219a. Pursuant to 16 U.S.C. § 1371(f) the Secretary determined that it is necessary to exempt all military readiness activities that deploy MFA sonar from compliance with the requirements of the MMPA. App. 219a. The Secretary's action allows the Navy to train without applying for the otherwise required take permits but requires the Navy, during the exemption period, to execute a plan to come into full compliance with the MMPA. App. 220a. It did not preclude the district court from requiring compliance with NEPA. The district court exercised its equitable discretion based on the Navy's separate NEPA violation and the

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[3] The MMPA provides in 16 U.S.C. § 1371:

(f) Exemption of actions necessary for national defense

(1) The Secretary of Defense, after conferring with the Secretary of Commerce, the Secretary of the Interior, or both, as appropriate, may exempt any action or category of actions undertaken by the Department of Defense or its components from compliance with any requirement of this chapter, if the Secretary determines that it is necessary for national defense.

(2) An exemption granted under this subsection –

(A) subject to subparagraph (B), shall be effective for a period specified by the Secretary of Defense; and

(B) shall not be effective for more than 2 years.

district court's discretion must be preserved to protect Congress's decision to subject the Navy's activity to NEPA.

The MMPA and NEPA serve entirely different purposes. NEPA is the nation's premiere environmental protection statute and its purpose is to provide decision makers such as the Navy with sufficient information to prevent harm by considering alternatives and mitigation measures. NEPA also serves the important function of involving the public in the decision making process and fully informing the public about the environmental consequences of an action. In enacting NEPA Congress made clear that it was intended to further substantive environmental objectives and "promote efforts which will prevent or eliminate damage to the environment." 42 U.S.C. § 4321. NEPA requires federal agencies to take a hard look at environmental consequences before undertaking their proposed actions. 42 U.S.C. § 4331. The NEPA process "ensures that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989). The NEPA process also insures that the information will be made available to the public so that it may participate in the decision making process and the decision's implementation. *Id.* Here, it was entirely reasonable for Congress to require the Navy to fully consider the environmental consequences of its activities, including mitigation measures and alternatives, and to

allow the public to participate in that decision making process.

The Navy cites a number of cases to support its view that a court has no discretion to ignore a Congressional balancing of priorities. Pet. Brief at 35. (citing *United States v. Oakland Cannabis Buyers' Coop.*, 532 U.S. 483 and *TVA v. Hill*, 437 U.S. 153 (1978)). The Navy's reliance on these cases here is misplaced. Indeed, both cases powerfully support respondents' position.

In *TVA v. Hill*, the government argued that the Endangered Species Act was impliedly repealed as to a dam project because Congress had continually authorized appropriations to build the dam. This Court, however, refused to prevent enforcement of the Endangered Species Act just because Congress had authorized and funded the dam project in other legislation. 437 U.S. at 189-193. The Court also refused to read a special "hardship exemption" into the Act. Because the Act contained no exemptions for federal agencies, the Court presumed that the Act's limited (and inapplicable) exemptions were the only hardship cases that Congress intended to exempt. *Id.* at 188. In *Oakland Cannabis Buyers' Coop*, the Court was unwilling to view Congress's omission of a medical exception to the Controlled Substances Act as an accident and was "unable in any event to override a legislative determination manifest in a statute." 532 U.S. at 493.

The parallels here of these cases are unmistakable – Congress has made a separate judgment that the Navy must follow NEPA, and this Court will not create exceptions or impliedly repeal NEPA in the absence of an irreconcilable conflict. The Court should not deprive the district court of equitable discretion to enforce NEPA pending trial because that would frustrate Congress's "manifest" determination that the Navy comply with NEPA.[4]

In sum, there is simply nothing in the statute authorizing the MMPA exemption that, either by its words or by necessity, precluded the district court from exercising discretion to issue a preliminary injunction to compel compliance with NEPA. In order to find that Congress has foreclosed the exercise of the usual discretion possessed by a court of equity, this Court has required that the purpose and language of the statute must limit the remedies available to the district court. *TVA v. Hill*, 437 U.S. 153 (imminent violation of the Endangered Species Act required injunctive relief); *compare*, *Weinberger v. Romero-Barcelo*, 456 U.S. 314-315 G (1982) (injunction was not the only means of insuring compliance with the Federal Water Pollution Control Act;

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[4] This is especially so in light of the fact that there is no exemption in NEPA for either the national defense or national security. *San Luis Obispo Mothers for Peace v. Nuclear Regulatory Commission*, 449 F.3d 1016, 1035 (9th Cir. 2006); *No GWEN Alliance of Lane County, Inc. v. Aldridge*, 855 F.2d 1380, 1384 (9th Cir. 1988).

purpose of act could be achieved by compliance with the permit requirements where no water pollution occurred from unpermitted activities). Here, Congress only authorized the Navy to be exempt from the MMPA, not from NEPA. Had Congress intended to alter the Navy's NEPA obligations, it would have done so. This Court should decline to judicially amend NEPA by finding an exemption that Congress has not created. *See, e.g., Knight v. C.I.R.*, 128 S.Ct. 782, 791 (2008) (holding that even where Congress's decision entails some uncertainty, that is no excuse for judicial amendment of a statute.) Petitioners' argument regarding the MMPA must be rejected.

2. Under This Court's *Flint Ridge* Decision, Every Federal Agency Must Comply With NEPA Unless The Agency's Authorizing Authority Expressly Prohibits It Or Makes Full Compliance Impossible.

The district court's order comports with this Court's test for resolving tension between NEPA and other statutes. In *Flint Ridge Development Co. v. Scenic Rivers Assn. of Oklahoma*, 426 U.S. 776, 787-788 (1976), this Court held that every federal agency must comply with NEPA unless there is a statutory conflict with the agency's authorizing legislation that "expressly prohibits or makes full compliance" with NEPA impossible. *Id., citing* 115 Cong. Rec. 39703 (1969) (report of House conferees). In *Flint Ridge*, the Court found a conflict because the agency's

authorizing legislation contained a statutory deadline that made compliance with NEPA impossible. Here, the MMPA neither prohibits nor prevents the Navy from complying with NEPA, and therefore the Navy fails the *Flint Ridge* test.

Congress did not circumscribe the discretion of the district court in this case. Regardless of the MMPA exemption, it commanded that the Navy comply with NEPA.

3. Congress Could Have Exempted The Navy From NEPA But Did Not.

Petitioners argue that the MMPA exemption provision was a response to a federal court order in *Natural Resources Defense Council v. Evans*, 232 F.Supp.2d 1003 (N.D. Cal. 2002). In that case, the district court issued an injunction to permit the use of low frequency active sonar for testing and training with restrictions to protect marine mammals. However, that case was also brought under NEPA, and the district court in that case found "plaintiffs have shown a likelihood of establishing that defendants acted arbitrarily in only considering in effect one alternative – the chosen one – and not considering a feasible alternative excluding more, but not all, areas of high marine mammal concentration, while preserving the ability to train in a variety of conditions." *Id.* at 1041. The court found "plaintiffs have shown that they are likely to prevail on establishing violations of

the MMPA, NEPA, the ESA and the APA." *Id.* at 1053.

Thus, Congress passed the MMPA exemption at a time when the Navy was enjoined under *both* NEPA and the MMPA. Congress was no doubt aware that the court enjoined the Navy based on NEPA as well as on the MMPA. Had Congress intended to amend NEPA with respect to Navy activities, it would have done so. *See, Romer v. Carlucci*, 847 F.2d 445, 456 (8th Cir. 1988) (Department of Defense Authorization Act of 1984 requirement that Air Force file an environmental impact statement applied to missiles authorized for deployment but Air Force was not required to include a discussion of alternative basing modes since the Act expressly precluded NEPA review of alternative basing modes); *see also, Defenders of Wildlife v. Chertoff*, 527 F.Supp.2d 119 (2007) (Congress authorized the Secretary of Homeland Security to waive *all* legal requirements the Secretary determined necessary to ensure expeditious construction of the border fence (Pub. L. No. 109-113, 119 Stat. 231, 8 U.S.C. § 1103); Secretary properly waived the requirements of NEPA, the Arizona-Idaho Conservation Act and eighteen other laws as authorized by Congress), *cert. denied*, 128 S.Ct. 2962.

Moreover, this Court assumes Congress is aware of existing law pertinent to the legislation it enacts. *Miles v. Apex Marine Corp.*, 498 U.S. 19, 32 (1990); *Goodyear Atomic Corp. v. Miller*, 486 U.S. 174, 184-185 (1988). This assumption is especially forceful where Congress provides for an exemption from one

body of laws but not from others. Congress here authorized the Navy to be exempt only from the MMPA.

There is no contradiction between Congress's decision to make the Navy eligible for exemption from the MMPA's specific protections for marine mammals while still requiring the Navy to comply with NEPA by evaluating how the training exercises would affect marine mammals and ways to avoid or minimize those effects, including consideration of alternatives. *See, Natural Resources Defense Council v. Evans*, 232 F.Supp.2d at 1041.

Indeed, the Navy's position, if accepted, would partially repeal NEPA by implication. This Court, however, disfavors implied repeals of federal statutes. *E.g., Cook County v. United States ex rel. Chandler*, 538 U.S. 119, 132 (2003); *Hagen v. Utah*, 510 U.S. 399, 416 (1994). Where two statutes are capable of co-existence, it is the "'duty of the courts, absent a clearly expressed congressional intention to the contrary, to regard each as effective.'" *Ruckelshaus v. Monsanto Co.*, 467 U.S. 986, 1018 (1984), *citing Regional Rail Reorganization Act Cases*, 419 U.S. 102, 133-134 (1974). The Court can and should give effect to both NEPA and the MMPA.

Unless exempted by Congress, our military must comply with the laws that protect the nation's resources even when training for military readiness purposes. As the court of appeals observed in *Ilio'uloakalani Coalition v. Rumsfeld*, 464 F.3d 1083,

1093 (9th Cir. 2006) "[s]trategic planning and the Army's metamorphosis are the Army's business, not the courts'. What involves us, however, is NEPA's requirement that the Army prepare an EIS to examine what effects any plans will have on the environment." *See also, Natural Resources Defense Council v. Evans*, 364 F.Supp.2d 1083, 1143 (N.D. Cal. 2003); *Makua v. Rumsfeld*, 163 F.Supp.2d 1202, 1221 (D. Haw. 2001).

Indeed, the Navy has acknowledged that it is subject to NEPA and has adopted regulations which require that it comply with NEPA at the earliest possible time to be an effective decision making tool. 32 C.F.R. § 775.3(a)(1). The Navy's regulations contemplate NEPA compliance even with regard to classified actions and continuing activities, including activities carried out in fulfillment of the Navy mission and function, such as existing training activities. 32 C.F.R. §§775.5-775.6. The Navy's failure to properly comply with NEPA here warranted issuance of the preliminary injunction which allowed the Navy to perform the training exercises with mitigation measures in place to protect California's natural resources until NEPA is fully complied with and the environmental consequences of the exercises are fully analyzed.

In summary, the Navy errs in insisting that the MMPA exemption foreclosed the district court from exercising its equitable powers to issue discretionary relief. Congress only exempted the Navy from the MMPA; it did not exempt Navy from the NEPA

process, and the district court must have discretion to prevent substantive harms to preserve meaningful NEPA review.

B. The Courts Below Properly Applied The Standards For Preliminary Injunctive Relief, Consistent With This Court's Formulation Of Those Standards.

1. The District Court Properly Relied On This Court's *Amoco Production* Decision.

The district court discussed generally the standards for a preliminary injunction. The court stated that "[w]here, as here, plaintiffs demonstrate a strong likelihood of prevailing on the merits of their claims and there is a 'possibility of irreparable harm,' injunctive relief is appropriate." App. 163a. Citing *Amoco Production Co. v. Gambell*, 480 U.S. 531, 545 (1987), the court explained: "The Supreme Court has held that, '[e]nvironmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, *i.e.*, irreparable. If such injury is sufficiently likely, the balance of harms will usually favor the issuance of an injunction to protect the environment.'" App. 163a-164a. The court found that plaintiffs demonstrated a strong likelihood of success on the merits of their NEPA claim, plaintiffs established to a near certainty that the use of MFA sonar will cause irreparable injury to the environment and to plaintiffs, the balance of hardships tipped in favor of granting an

injunction and the public interest outweighed the harm that defendants would incur or the public interest would suffer if defendants were prevented from using MFA sonar, absent the use of effective mitigation measures. App. 163a-164a, 200a-211a, 216a-218a. The district court applied the proper standards for preliminary injunctive relief.

2. The Courts Below Properly Found The Possibility Of Irreparable Injury.

a. The Court Of Appeals Did Not Use A "Mere Possibility Of Irreparable Injury" Standard.

Petitioners argue that the court of appeals used a "mere possibility of irreparable harm" standard. Pet. Brief 38-39. This is incorrect for at least two reasons. First, the court of appeals stated that NRDC had the burden of demonstrating the "possibility of irreparable injury" and that "NRDC must show the possibility of harm to its membership." App. 75a-76a. The court of appeals did not state that NRDC needed to show a "mere" possibility of harm. App. 75a. While the court of appeals cited to a case holding that a district court erred in requiring that plaintiff show a significant threat of irreparable injury rather than a "mere possibility of irreparable harm" (App. 76a-77a), that is not how the court formulated the standard in

reviewing the district court decision here.[5] Moreover, while the court rejected the Navy's argument that NRDC was required to demonstrate the possibility of irreparable injury at the species or stock-level, the court nevertheless found that NRDC would have satisfied that requirement. App. 77a. It stated that the district court found that NRDC had established to a near certainty that the use of MFA sonar "will cause irreparable injury to the environment and to NRDC's membership." App. 75a. The court of appeals' decision comports with this Court's formulation, cited by the district court, of the standard for review of a preliminary injunction in cases involving harm or injury to the environment. *Amoco Production Co. v. Gambell*, 480 U.S. at 545 (if such injury is sufficiently likely, the balance of harms will usually favor the issuance of an injunction to protect the environment).

Second, while it is doubtful that there is any material difference between the terms "possibility of harm" and "likelihood of harm" – this Court has employed both of them, *see, e.g.*, *Ashcroft v. ACLU*, 542 U.S. 656, 666 (2004) ("likelihood") and *Brown v. Chote*, 411 U.S. 452, 456 (1973) ("possibility") – petitioners are wrong to fault the Ninth Circuit. This

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[5] Petitioners fail to cite a single case establishing that a possibility of harm is inadequate. They go so far as to misquote one of the cases they do cite, substituting "harm" for "success". Pet. Brief at 39 (quoting *In re Delorean Motor Co.*, 755 F.2d 1223, 1229 (6th Cir. 1985).) That case discussed the degree of success on the merits required for injunctive relief, not the degree of harm.

is the standard that the *district court* applies when it decides whether to issue a preliminary injunction. *Brown*, 411 U.S. at 456. The appellate courts, by contrast, "may only consider whether the issuance of the injunction constituted an abuse of discretion." *Id.* at 457; *Doran v. Salem Inn, Inc.*, 422 U.S. 922, 931-932 (1975) ("[W]hile the standard to be applied by the district court in deciding whether a plaintiff is entitled to a preliminary injunction is stringent, the standard of appellate review is simply whether the issuance of the injunction, in light of the applicable standard, constituted an abuse of discretion."). The court of appeal applied the abuse of discretion standard, App. 36a and 90a, and thus did not err.

b. The District Court Properly Found A Possibility Of Irreparable Injury Based On The Navy's Own Environmental Documents Which Predicted Injury To Marine Mammals.

In arguing that the courts below erroneously found the possibility of irreparable injury, petitioners characterize the possibility of irreparable injury as little more than "speculation." Pet. Brief 41-43. That "speculation" is based on the injury to marine mammals predicted in the Navy's own EA. The EA identified two levels of harassment, Level A and Level B, with Level A representing a permanent threshold shift which "is non-recoverable" and "must result from the destruction of tissues within the auditory

system." JA 165. The Navy's EA stated that this permanent threshold shift "qualifies as an injury." JA 165. The Navy's EA considered all beaked whale harassment to be Level A harassment. JA 166. The EA predicted numerous injuries to marine mammals from the Navy's use of MFA sonar. For example, the excerpts from the EA included in the joint appendix state that of the 152 Baird's Beaked Whales on the west coast, 4 would be exposed to Level A harassment. JA 178-179. The EA states that 8 Common Dolphin will be exposed to Level A harassment. JA 183. Of the 1,121 Cuvier's Beaked Whales on the west coast, 218 incidents of Level A harassment are predicted. JA 185. Of the 766 Ziphiid Beaked Whales, 52 individuals will be exposed to Level A harassment. JA 198-199.

Petitioners obliquely invite this Court to reweigh the evidence and make its own factual finding that the Navy's use of MFA sonar is not likely to harm marine mammals. Pet. Brief at 39-43. Again, petitioners ignore the standard of review. "[A]ppellate courts must constantly have in mind that their function is not to decide the factual issues de novo." *Anderson v. City of Bessemer City, North Carolina*, 470 U.S. 564, 573 (1985) quotations omitted. The district court found that irreparable harm was likely – indeed, that it was a "near certainty." App. 164a. This Court defers to a district court's factual findings unless they are clearly erroneous. Fed. R. Civ. P., Rule 52(a)(6).

Petitioners attempt to downplay the evidence of harm to marine mammals provided in the Navy's EA. Petitioners argue that the Navy's modeling predicted only Level A harassment to eight common dolphins. Pet. Brief at 44. They further claim that even though the computer modeling predicted only Level B harassment for beaked whales, the Navy adopted a policy of modeling Level B harassment as Level A for certain beaked whale species. Pet. Brief at 44. However, in the EA, the Navy explained that it based its behavioral effects threshold primarily on behavioral observations reported in scientific studies. JA 166-167. With regard to beaked whales, the Navy considered one stranding where Navy MFA sonar was identified as "the most plausible contributory source to the stranding event." JA 168. The Navy acknowledged that beaked whales are expected in the deeper portions of the area where the training exercises will occur. JA 170. The Navy stated that since the exact cause of stranding events are unknown and meaningful impact thresholds cannot be derived specifically for beaked whales, the Navy took a conservative approach and treated all behavioral disturbance of beaked whales as a potential injury. JA 170. The district court's reliance on the Navy's conservative approach is not clear error because now, in litigation, the Navy is prepared to discard that approach.

The district court had before it not only the Navy's EA but also declarations from both sides and documentary evidence of harm to marine mammals. For instance, the record contains evidence of mass

strandings of several species of whales following naval exercises in the Bahamas, the Canary Islands, Hawaii, North Carolina, Japan, Greece, Spain, Taiwan, the Madeira archipelago, and the U.S. Virgin Islands. JA 94-104. Additionally, after dedicating several symposia to the issue, the International Whaling Commission's Scientific Committee concluded that the weight of accumulated evidence associated MFA sonar with mass beaked whale strandings. JA 735. The district court also relied on conclusions by the Navy's Office of Naval Research that the evidence of sonar causation of whale beaching is "completely convincing and there is a serious issue of how best to avoid/minimize future beaching events." App. 156a; JA 99. The district court found that the EA alone contained evidence that the training exercises "will cause 170,000 Level B harassment exposures and 466 permanent injuries to marine mammals, including five endangered species." App. 157a. The district court's factual findings, based on the Navy's own reports, are not clearly erroneous and must be affirmed. Fed. R. Civ. P., Rule 52(a); Wright, Miller & Kane, *Federal Practice & Proc.*; Civil 2d § 2962 p. 443 (2nd ed. 1995).

Finally with regard to irreparable injury, petitioners contend that the courts below erroneously focused on irreparable injury to the environment rather than to respondents themselves. Pet. Brief 43-45. Petitioners confuse irreparable injury with the injury-in-fact requirements for standing under Article III. Pet. Brief at 43. They are not the same. Although

standing does require an injury to the plaintiff, as opposed to the environment, *Friends of the Earth, Inc. v. Laidlaw Environmental Services, Inc.*, 528 U.S. 167, 180-181 (2000), standing does not require an irreparable injury at all. It can be a purely economic injury. *E.g.*, *Franchise Tax Board of California v. Alcan Aluminum Ltd.*, 493 U.S. 331, 336 (1990) (lower stock values demonstrate injury-in-fact for standing purposes). The injury-in-fact requirement simply ensures that the plaintiff has a "personal stake" in the dispute, and thus a legitimate controversy for purposes of Article III. *Clinton v. City of New York*, 524 U.S. 417, 429-430 (1998); *Japan Whaling Assoc. v. American Cetacean Society*, 478 U.S. 221, 230 n. 4 (1986) (whale watchers "undoubtably have alleged a sufficient injury-in-fact" to establish standing).

By contrast, for purposes of a preliminary injunction, it is entirely proper for the district court to consider irreparable harm to the environment. In NEPA litigation, it is ubiquitous. *See, e.g., Aberdeen & Rockfish R. Co. v. Students Challenging Agency Procedures*, 409 U.S. 1207, 1216-1218 (1975) (Burger, C.J., on denial of stay); D. Mandelker, *NEPA Law and Litigation*, § 4-58, pp. 4-194 to 4-195 (2d ed. 2008) (collecting cases). As this Court stated in *Amoco Production Co. v. Village of Gambell*, 480 U.S. at 545, environmental injury is nearly always irreparable, and, "[i]f such an injury is sufficiently likely, therefore, the balance of harms will usually favor the issuance of an injunction to protect the environment."

Indeed, petitioners miss the basic point of a preliminary injunction. The purpose of a preliminary injunction is to preserve the relative positions of the parties until trial on the merits and to prevent the judicial process from being rendered futile by defendant's action. *Univ. of Tex. v. Camarillo*, 451 U.S. 390, 394 (1981); Wright, Miller & Kane, *Federal Practice & Proc.*, Civil 2d § 2947, p. 123 (2nd ed. 1995). In other words, a preliminary injunction both protects the plaintiff from harm and preserves the court's power to render a meaningful decision on the merits. *Id.*, p. 121; *Doran*, 422 U.S. at 932 (upholding preliminary injunction in part because "otherwise a favorable final judgment might well be useless"). When the merits concern an environmental statute, the question is whether an injunction would keep the defendant from causing environmental damage that a final judgment on the merits could not undo. *See, Amoco Production*, 480 U.S. at 545.

The answer to that question here is yes. Though procedural, NEPA is designed to prevent environmental harm, not to generate paper. 40 C.F.R. § 1500.1(c); *Robertson v. Methow Valley Citizens Council*, 490 U.S. at 348-349. NEPA requires the Navy to prepare an EIS *before* killing and injuring scores of marine mammals. *See* 40 C.F.R §§ 1502.5, 1506.1. In the EIS, the Navy must consider ways to avoid or lessen the damage. 40 C.F.R. §§ 1502.14, 1508.20. Once the damage is done, it cannot be undone. The injunction preserves the district court's

power to render a meaningful decision on the merits of respondents' NEPA claim.

In short, the district court did not abuse its discretion by considering irreparable harm to the environment.

3. The District Court Correctly Balanced The Hardships And Public Interests.

The district court also properly balanced the relative hardships and public interests. The court found that the "balance of hardships tips in favor of granting an injunction, as the harm to the environment, Plaintiffs and public interest outweighs the harm that Defendants would incur (or the public interest would suffer) if Defendants were prevented from using MFA sonar, absent the use of effective mitigation measures, during a subset of their regular activities in one part of one state for a limited period." App. 164a. The public undoubtedly has an important interest in a well-trained military. However, the public also has an important interest in protection of coastal resources.

Petitioners argue that the balance of hardships tips decisively against an injunction. Pet. Brief at 46. They cite to the appellate court motions panel's observation that the United States is involved in war in two countries but petitioners noticeably omit the panel's subsequent statement that the safety of the whales as well as the safety of our warriors and of our

country must be weighed. App. 182a.[6] Petitioners further contend that the Navy "could" be unable to train and successfully certify a strike group, claiming the appellate court failed to weigh the magnitude of potential harm. Pet. Brief at 47. This claim ignores the appellate court's detailed analysis of the harm to the Navy of the mitigated preliminary injunction (JA 78a-89a) and the Navy's own admission during oral argument that it can certify strike groups despite the inability to train in surface ducting conditions. JA 80a. Moreover, as the appellate court observed, the Navy did not represent to the courts below that it will cease its training exercises if the injunction were upheld. JA 80a n. 61. Indeed, the declaration cited by petitioners discusses the Navy's inability to train if precluded from using MFA sonar entirely, not if allowed to train using mitigation measures. JA 577.[7] And in a prior consistency determination for sonar activities off the central coast of California (CD-37-06 Navy Monterey Bay), the Navy agreed to use a horizontal distance calculation of 154 dB and, if that meant a larger preclusion zone, then that would

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[6] Of these two countries, Afghanistan is land-locked and Iraq has a nominal ocean connection. Training with MFA sonar to detect submarines appears to have a tenuous connection with those conflicts.

[7] Petitioners quote a century-old observation by Theodore Roosevelt about the need to practice at sea. Pet. Brief at 48. It is equally well known, however, that Roosevelt valued our country's natural resources as well. It is precisely the need to balance such competing important interests which the courts below carefully considered.

become the preclusion zone. JA 278-285.[8] Additionally, the district court found, based on the evidence presented to it, that the Navy had employed mitigation measures in the past without sacrificing training objectives. App. 136a, 158a. The court further determined that there was no evidence in the record that the Navy will suffer irreparable injury. App. 136a. The Navy has not established that the district court's factual findings were clearly erroneous.

Petitioners also contend the appellate court ignored the degree to which an injunction is necessary to further the purposes of the statute, claiming that because the Navy prepared an EA, the purpose of NEPA was served. Pet. Brief at 49. This is obviously incorrect. The Navy failed to comply with NEPA's obligation to take a hard look at its actions *before* undertaking them, the Navy erroneously found there would be no significant impact to the environment from its exercises despite evidence to the contrary in its EA and the Navy wants to complete its action without fully analyzing the environmental

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[8] The Navy's prior agreement to use a lower received level formed the basis for the Commission's condition of approval for these exercises. JA 284-285. The Commission required the Navy to use a marine mammal preclusion zone in which the received level has attenuated to 154 dB or, if that cannot be achieved, to either cease sonar transmission when a marine mammal was within 2 km or provide the Commission information supporting the Navy's provision of a safety zone as close as possible to 154 dB. JA 261. The Commission's condition closely resembled the district court mitigation measure regarding the safety zone. App. 139a.

effects. The purpose of NEPA is to provide decision makers such as the Navy with sufficient information to prevent harm, not to generate useless environmental impact statements after the harm has occurred. As this Court observed, the role of the court is to insure that the agency has taken a hard look at environmental consequences. *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n. 21 (1976). NEPA's purpose is clearly *not* fully served by the mere preparation of an EA.

Petitioners further contend that the courts below erred in refusing to defer to the executive branch and the Chief of Naval Operations (CNO). They complain that the appellate court "did not even mention" the President's determination under the CZMA. Pet. Brief at 50. Petitioners are mistaken. The appellate court did mention the President's action in its recitation of the facts (App. 6a) but it was not relevant to the court's review of the district court decision. The district court discussed the President's action which occurred under the CZMA, not NEPA, and found that it was constitutionally suspect under the doctrine of separation of powers. App. 124a-134a. However, the district court found it unnecessary to address the President's constitutionally questionable action because the court's injunction stood firm on NEPA grounds. App. 134a. Petitioners did not present the question of the Presidential exemption under the CZMA for review by this Court. Thus, the appellate court's failure to discuss an issue on which the district court did not base its decision is irrelevant.

The appellate court did recognize the importance of protecting national security. The court also observed that in the face of assertions of potential harm to military readiness, courts have held that the armed forces must take precautionary measures to comply with the law during its training, citing cases involving carefully tailored injunctions. App. 88a. The court explained that the "district court here carefully balanced the significant interests and hardships at stake to ensure that the Navy could continue to train without causing undue harm to the environment. We review that balance to determine whether it rests on clearly erroneous findings of fact. Having concluded that it does not, we determine that the district court did not abuse its discretion and therefore do not disturb its carefully considered injunction." App. 88a. The appellate court did not err in applying traditional standards of review for preliminary injunctions in this case, even though it involves military readiness.[9]

California has a strong public interest in protecting its coastal resources, including marine mammals which are a natural resource of California's coastal zone. *See, California v. Norton*, 311 F.3d 1162, 1171,

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[9] Petitioners also complain that the appellate court erred in not deferring to the Navy's military assessment, noting that the after action reports "simply did not specify whether encounters occurred at tactically significant periods." Pet. Brief at 52. The after action reports were prepared by the Navy and any deficiency or failure to specify was the Navy's fault. Petitioners cannot fault the courts for omissions and lack of adequate explanation in the Navy's own evidence.

n. 5 (9th Cir. 2002); 15 C.F.R. § 930.11 (natural resource includes marine mammals found within a state's coastal zone on a regular or cyclical basis); CA Pub. Resources Code, §§ 30001 (permanent protection of the state's natural resources is a paramount concern to present and future residents of the state and nation), 30230 (marine resources shall be maintained and uses of the marine environment shall be carried out in a manner that sustains the biological productivity of coastal waters), 30231 (biological productivity of coastal waters shall be maintained). California recognizes that such protection offers many benefits including conservation, enhancing recreational opportunities and contributing to the economy through tourism. *See*, *e.g.*, CA Pub. Resources Code, § 36601 (providing for marine managed areas). California's extraordinary marine biological diversity is a vital asset to the state and nation and is important to public health and well being, ecological health and ocean dependent industry. *See*, *e.g.*, CA Fish & Game Code, § 2851 (providing for marine life protection). Further evidencing the value of marine mammals to California, the California Legislature designated the gray whale as the state marine mammal. CA Gov. Code, § 425.5.

The public's interest in protecting marine mammals cannot be gainsaid. The district court properly balanced the public's interest in having both a well-trained Navy and protecting California's natural resources.

Moreover, the district court carefully considered the impacts on the Navy of its injunction. In issuing the modified preliminary injunction, the district court did not accept all of the mitigation measures proffered by plaintiffs and accepted many of the mitigation measures offered by the Navy. In the order denying the Navy's ex parte application to vacate or stay the preliminary injunction, the district court explained its approach to issuing the preliminary injunction. The district court stated that the "Court determined that while Defendant's proposed measures were inadequate, Plaintiffs' proposed measures were too sweeping." App. 103a. The court accepted a number of the Navy's arguments and tailored the injunction to allow training to occur at night and in low visibility, providing for a 12 nautical mile instead of 25 nautical mile exclusion zone, and allowing training around sea mounts, near the Tanner and Cortez Banks and in waters shallower than 1,500 meters. App. 104a. In accepting the Navy's arguments, the court relied on the declaration by Rear Admiral John M. Bird stating that MFA sonar training must be conducted at night, in low visibility conditions and in the varying bathymetry present in Southern California's littoral regions to be realistic. App. 103a-104a. The court also accepted the Navy's concession that it could maintain a 12 nautical mile exclusion zone without compromising training. App. 104a. However, instead of using broad geographical exclusions, the court opted for measures to promote the sighting of whales and a larger "safety zone" to prevent injurious exposure to MFA sonar. App. 104a.

The court ordered the Navy to improve monitoring efforts by instituting aerial monitoring for sixty minutes before exercises using MFA sonar, providing trained lookouts, and using existing passive acoustic monitoring devices to the extent possible. App. 104a. The court ordered the Navy to maintain a 12 nautical mile coastal exclusion zone, secure MFA sonar when marine mammals are spotted within 2,200 yards, power down MFA sonar in the presence of significant surface ducting conditions which cause sound to travel further at higher intensities and to avoid the use of MFA sonar in the geographically restricted, biologically rich Catalina Basin. App. 104a-105a.[10]

The district court's detailed, thoughtfully conceived injunction was appropriate. *See, National Audubon Society v. Department of the Navy*, 422 F.3d 174, 203-207 (4th Cir. 2005) (remanding the case to the district court to issue a tailored preliminary injunction, explaining that the Navy should be allowed to conduct activities related to military readiness that will not harm the environment and enjoined from activities that would cause harm or limit its

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[10] In affirming the district court order, the court of appeals observed that while it recognized that each Navy has unique operating requirements, the record showed that NATO imposes the same 2,000 meter shutdown zone when a marine mammal is detected as required by the district court and that the Australian Navy goes farther, mandating a shutdown if a marine mammal is detected within 4,000 yards of a sonar-emitting vessel. App. 84a, n. 67; *see also*, JA 347 (Royal Australian Navy management plan).

reasonable choice of alternatives). The district court here properly exercised its duty, sitting as a court of equity, to grant injunctive relief "upon conditions that will protect all – including the public – whose interests the injunction may affect." *Inland Steele Co. v. United States*, 306 U.S. 153, 157 (1939).[11]

This case resembles another case involving the Navy and its military training activities, *Weinberger v. Romero-Barcelo*, 456 U.S. 305, with one important difference; here, unlike in *Weinberger*, there is evidence of environmental harm warranting injunctive relief against the Navy. In *Weinberger*, the Navy used Vieques Island for weapons training. During air-to-ground training, pilots sometimes missed and ordnance fell into the sea. While this was a technical violation of the Federal Water Pollution Control Act (FWPCA), the district court found the Navy's unpermitted discharge had not harmed the quality of the water. *Id.* at 307. The district court found that a permit under the FWPCA was necessary for the Navy's activities. The court ordered the Navy to apply for a permit but declined to enjoin the Navy's weapon training because of the lack of appreciable harm to the environment. *Id.* at 310. The Court of Appeals for

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[11] Petitioners mistakenly contend that the Administrative Procedures Act provides a basis for overturning the courts below. That Act allows a court to either grant injunctive relief or limit relief to a declaration of the parties' rights. Where, as here, the court finds the possibility of irreparable injury, injunctive relief under the Act is appropriate. 5 U.S.C. § 702-703.

the First Circuit held the district court erred in denying injunctive relief and refused to engage in balancing due to a perceived statutory obligation to protect coastal waters. *Id.* at 310-311. This Court reversed, finding the district court properly denied preliminary injunctive relief. The Court found that the district court properly ordered the Navy to apply for a permit but also properly denied injunctive relief because the Navy's discharge of ordnance had not polluted the water. As the Court explained, the FWPCA permitted the district court to order the relief it considered necessary to secure prompt compliance with the Act; that relief could include, but was not limited to, an order of immediate cessation. *Id.* at 320.

Here, in contrast to *Weinberger*, the district court was faced with clear evidence of harm caused by the Navy's training activities, harm evidenced by the Navy's own environmental documents and reports. Under these circumstances, the district court correctly exercised its equitable powers to arrive at a "'nice adjustment and reconciliation' between the competing claims." *Id.* at 312, quoting *Hecht v. Bowles*, 321 U.S. 321, 329 (1944). The district court balanced the "'conveniences of the parties and possible injuries to them according as they may be affected by the granting or withholding of the injunction.'" *Id.*, citing *Yankus v. United States,* 321 U.S. 414, 440 (1944). As this Court stated in *Weinberger*, the "'essence of equity jurisdiction has been the power of the Chancellor to do equity and to mould each decree to

the necessities of the particular case.'" *Id.*, quoting *Hecht v. Bowles*. This is precisely what the court below did – the district court molded the preliminary injunction to the necessities of this case.

II. STRONG POLICY REASONS SUPPORT AFFIRMING THE COURTS BELOW.

Strong policy reasons support affirming the judgment of the court of appeals and the order of the district court. Absent a clear and unequivocal legislative mandate from Congress to preclude the courts from exercising their power in equity, interference with the courts' traditional equitable authority will not be lightly assumed. Where, as here, Congress has not evinced such a mandate in authorizing the Navy to be exempted only from the MMPA, a district court should not be precluded from issuing a carefully tailored injunction. To hold otherwise would be a drastic departure from this Court's historic jurisprudence.

Petitioners argue for a breathtakingly narrow interpretation of irreparable injury to California's natural resources. They assert that irreparable injury exists only if plaintiffs establish a likelihood of harm to a species *as a whole* and that harm is permanent, or at least of long duration. This Court should reject this unduly restrictive understanding of irreparable injury. The Commission would be denied effective relief if it had to wait until injury to a species at a population level has already occurred before it could

seek judicial intervention to protect California's valuable coastal resources.

Additionally, this Court should reject petitioners' argument that plaintiffs must proffer substantial proof and make a clear showing that injunctive relief is necessary to prevent irreparable injury. Pet. Brief at 39. The Commission must be able to seek such relief against a defendant when the Commission demonstrates that irreparable injury to coastal resources is possible. There is no justification for curtailing the authority of States to seek injunctive relief to protect their sovereign resources, particularly when a State has established a strong likelihood of prevailing on the legal merits of its claims against the federal government. Given the value and importance to California of protecting its coastal resources, this Court should refuse to limit the Commission's ability to protect those resources from the possibility of harm. As this Court recognized in *Amoco Production*, injury to the environment is nearly always irreparable. *Amoco Production Co. v. Gambell*, 480 U.S. at 545.

Finally, the Navy is not without recourse. If the mitigation measures render the Navy unable to certify sufficient naval forces to provide for the national defense, the Navy may return to the district court and request relief. App. 89a.

CONCLUSION

The judgment of the Court of Appeals upholding the district court's issuance of the preliminary injunction should be affirmed.

Dated: September 8, 2008

Respectfully submitted,

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REPLY BRIEF

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In the Supreme Court of the United States

DONALD C. WINTER, SECRETARY OF THE NAVY, ET AL., PETITIONERS

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

REPLY BRIEF FOR THE PETITIONERS

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NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.

ON WRIT OF CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

REPLY BRIEF FOR THE PETITIONERS

The Ninth Circuit upheld a preliminary injunction that seriously restricts the Navy's use of mid-frequency active (MFA) sonar during vitally important training exercises in the Southern California Operating Area (SOCAL). That injunction overrides the judgments of the President and the Nation's top naval officers as to the paramount national security interest in using MFA sonar effectively in those training exercises, the Congress as to when such national security interests may trump the general public interest in marine mammal protection, the federal agency charged with protecting marine mammals as to the risks posed by the use of MFA sonar during the exercises, and the federal agency charged with interpreting the National Environmental Policy Act (NEPA) as to appropriate steps for satisfying

NEPA's procedural requirements going forward. In addition, the injunction rests on a fundamental misapplication of the equitable principles that have long governed the entry of a preliminary injunction.

Respondents have provided no reason for this Court to embrace that injunction. Indeed, respondents have essentially abandoned the reasoning of the lower courts that the Council on Environmental Quality (CEQ) improperly determined that "emergency circumstances" warranted alternative NEPA arrangements under 40 C.F.R. 1506.11. Instead, respondents now argue that NEPA does not permit CEQ to authorize *any* alternative arrangements for complying with NEPA in the circumstances here, mount a separation-of-powers attack on the application of CEQ's longstanding "emergency circumstances" regulation, and raise various other challenges to the invocation of that regulation. To the extent they are properly before this Court, none of those arguments fares any better than the reasoning of the lower courts that even respondents no longer seriously defend.

With respect to the exercise of equitable discretion, respondents urge this Court to follow in the footsteps of the Ninth Circuit and disregard the professional judgments of the Commander-in-Chief, the Chief of Naval Operations, and other top naval officers regarding the serious impact of the injunction on military readiness and national security. Further, respondents greatly overstate the demonstrated threat of potential injury or death to marine mammals. In the end, all respondents can point to is the *possibility*—despite the absence of any evidence of harm to marine mammals from the Navy's use of MFA sonar in SOCAL over the past 40 years—that the MFA sonar training at issue will injure or kill marine mammals. But that "possibility" is not

sufficient to support a finding of irreparable injury to respondents under established equitable principles governing injunctive relief. And, in any event, it is not sufficient to outweigh the vital public interest in military readiness and the training exercises at issue.

I. RESPONDENTS HAVE NOT ESTABLISHED A LIKELIHOOD OF SUCCESS ON THE MERITS

A. Respondents Offer No Serious Defense Of The Rulings Below That CEQ Misinterpreted Its Own Regulation

Respondents effectively abandon the holdings of the courts below that formed the legal foundation for the preliminary injunction. Under 40 C.F.R. 1506.11, an agency is authorized to make alternative arrangements when "emergency circumstances" render it necessary to take an action with significant environmental impact without observing the provisions in CEQ's regulations governing preparation of an environmental impact statement (EIS). CEQ reasonably construed that regulation to permit such alternative arrangements here to enable the Navy to conduct effective, vital training exercises in SOCAL using MFA sonar until the completion of an EIS in January 2009 concerning all naval activities within SOCAL. The district court clearly erred in rejecting CEQ's interpretation of its own regulation, and the Ninth Circuit compounded that error by deferring to the district court's interpretation rather than CEQ's. See Gov't Br. 21-33.

The NRDC respondents dedicate only one sentence to that issue in their merits brief, making the conclusory assertion that the courts below were "correct" in concluding that an "emergency" under Section 1506.11 requires the circumstances to be "unforeseen" as well as "urgent" (Br. 22). And the California Coastal Commis-

sion (CCC) makes no attempt at all to defend that merits ruling (Br. 2). Respondents' failure to offer any meaningful defense of the legal rulings below is alone sufficient to justify reversal of the district court's extraordinary injunction at this interlocutory stage of the case.

B. NRDC's Alternative Arguments Furnish No Basis For Affirming The Preliminary Injunction

1. NEPA allowed alternative arrangements in the "emergency circumstances" confronting the Navy

Although respondents effectively concede that the courts below erred in rejecting CEQ's interpretation of its "emergency circumstances" regulation, they urge affirmance of the preliminary injunction on the alternative ground that CEQ's and the Navy's invocation of the regulation as so interpreted violated NEPA. But just as CEQ's interpretation of its own regulation is entitled to "controlling weight" where, as here, it is not "plainly erroneous or inconsistent with the regulation," *Thomas Jefferson Univ.* v. *Shalala*, 512 U.S. 504, 512 (1994) (citation omitted); accord *Auer* v. *Robbins*, 519 U.S. 452, 461 (1997), CEQ's interpretation of NEPA is entitled to "substantial deference," *Robertson* v. *Methow Valley Citizens Council*, 490 U.S. 332, 355-356 (1989). CEQ's conclusion that the Navy's action is consistent with NEPA, as interpreted by Section 1506.11, is reasonable and therefore entitled to deference.

CEQ was "established by NEPA with authority to issue regulations interpreting it," and CEQ has promulgated regulations setting out steps that agencies must follow. *Department of Transp.* v. *Public Citizen*, 541 U.S. 752, 756-757 (2004); see *Andrus* v. *Sierra Club*, 442 U.S. 347, 358 (1979) (citing 42 U.S.C. 4344(3)). Those regulations impose numerous procedural require-

ments, see, *e.g.*, 40 C.F.R. 1501.4, 1502.1-1503.4, 1506.6, but also make clear that they may properly be displaced with alternative arrangements in "emergency circumstances." 40 C.F.R. 1506.11.

The "emergency circumstances" regulation was promulgated in 1979 and has been invoked some 41 times. See CEQ, *Alternative Arrangements* (updated Sept. 2008) <http://www.nepa.gov/nepa/eis/Alternative_Arrangements_Chart_092908.pdf>; 137 Cong. Rec. 7008-7009 (1991). Without such accommodation, NEPA would have prohibited, *inter alia*, the government's prompt restoration of critical infrastructure for human habitation after Hurricane Katrina, immediate action necessary to preserve endangered species, and cargo-flight operations essential to maintain military readiness in the wake of the first Gulf War. Cf. Gov't Br. 30-31. No court has ever found such common-sense emergency arrangements to violate NEPA. Even NRDC has represented to Congress that "*NEPA itself* allows for emergency action prior to the completion of environmental documentation in consultation with the CEQ." *Id.* at 23 n.4 (quoting testimony). And Congress—which is presumed to be aware of Section 1506.11 and its repeated administrative invocation since 1980—has declined to amend NEPA in light of that understanding. See *ibid.*

That understanding is a manifestation of the "rule of reason" that is "inherent in NEPA" and that must inform the "policies behind NEPA and Congress' intent." *Public Citizen*, 541 U.S. at 767-768. It also is consistent with NEPA's direction that agencies must, "to the fullest extent possible," prepare a detailed statement to accompany proposed action. 42 U.S.C. 4332(2)(C). While the phrase "fullest extent possible" emphasizes that environmental considerations are not to "be shun-

ted aside in the bureaucratic shuffle," *Flint Ridge Dev. Co.* v. *Scenic Rivers Ass'n*, 426 U.S. 776, 787 (1976), the need for alternative arrangements in emergency circumstances reflects statutory and operational imperatives, not mere bureaucratic convenience. Indeed, Congress itself provided that agencies must carry out the "policy set forth in [NEPA]" in a manner "consistent with other essential considerations of national policy," 42 U.S.C. 4331(b), which necessarily include the need for prompt action in emergency circumstances in order to protect the public interest and prevent serious harm.

NRDC notes (Br. 34-35) that the current series of SOCAL exercises was planned in 2006, and it contends that preparation of a full EIS was "neither impossible nor impractical" because the Navy could have prepared an EIS at that time. The critical point, however, is that the Navy was confronted in January 2008 with an urgent need to proceed immediately with its planned training exercises to fulfill its statutory obligations under 10 U.S.C. 5062 and prepare for wartime deployment. It was impossible or impractical *at that time* to prepare a full EIS before proceeding. Even if an EIS should have been prepared prior to that time, that omission did not diminish the paramount public importance of proceeding as planned.

Although NEPA provides that all agencies shall include a detailed statement of environmental impact in every proposal for major federal action significantly affecting the quality of the human environment, NEPA "nowhere specifies the consequences of a failure" by agency officials to do so. *Brock* v. *Pierce County*, 476

U.S. 253, 259 (1986).[1] "This Court has frequently articulated the 'great principle of public policy, applicable to all governments alike, which forbids that the public interests should be prejudiced by the negligence of the officers or agents to whose care they are confided.'" *Id.* at 260 (quoting *United States* v. *Nashville, Chattanooga & St. Louis Ry.*, 118 U.S. 120, 125 (1886)). For that reason, the Court has been "most reluctant to conclude that every failure of an agency to observe a procedural requirement voids subsequent agency action, especially when important public rights are at stake." *Ibid.*; see generally *Barnhart* v. *Peabody Coal Co.*, 537 U.S. 149, 158-159 (2003) (discussing cases). Those principles apply *a fortiori* to the imperative of military readiness, especially where the President and top military officers have determined that the action is "essential to national security." Pet. App. 232a. CEQ's and the Navy's invocation of the "emergency circumstances" regulation in this case therefore is consistent not only with NEPA itself but also with settled background principles of statutory construction.

NRDC's contrary position is based on its view that alternative arrangements under Section 1506.11 constitute an "exempt[ion] * * * from NEPA" that Congress has not authorized. NRDC Br. 33. That objection is flawed on several grounds. First, as this case illustrates, alternative arrangements are a means of *complying* with NEPA. CEQ approved emergency arrange-

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[1] CEQ's regulations do provide that until an agency issues a record of decision following preparation of an EIS, it shall take no action that would have an adverse environmental impact or limit the choice of reasonable alternatives. 40 C.F.R. 1506.1(a). But, of course, Section 1506.11 does not require compliance with such regulations where, as here, "emergency circumstances" are present.

ments for the Navy involving enhanced public-participation, research, and mitigation measures to serve as a bridge until the Navy's ongoing EIS covering all future activity in SOCAL could be completed. Pet. App. 240a-248a. Because Section 1506.11 provides a means for complying with NEPA, NRDC is wrong in suggesting (Br. 1, 3) that the Navy has conceded that it has violated NEPA.

Second, even if Section 1506.11 is viewed as authorizing exemptions from NEPA's usual EIS requirement, such exemptions are authorized by NEPA in emergency circumstances, for the reasons discussed above. The fact that Congress has enacted discrete exemptions from NEPA for specific agency actions that may not have qualified as "emergency circumstances" (see NRDC Br. 33) does not speak to whether NEPA itself permits emergency actions to go forward before the normal EIS process can be completed. Likewise, NRDC's reliance (at 34 & n.8) on *Flint Ridge* and *Calvert Cliffs Coordinating Committee, Inc.* v. *United States Atomic Energy Commission*, 449 F.2d 1109 (D.C. Cir. 1971), is misplaced. Neither case involved action taken to respond to emergency circumstances or the validity of Section 1506.11.

Here, moreover, the Navy acted reasonably and in good faith in attempting to comply with NEPA and CEQ's implementing regulations, and its actions effectively satisfied the three core statutory requirements in NEPA itself. The Navy's comprehensive 293-page Environmental Assessment (EA) addressing the environmental impacts of and alternatives to the series of 14 exercises in this case (E.R. 44-336; J.A. 107-224) would constitute a "detailed statement" of environmental impacts under any reasonable reading of that statutory

requirement. 42 U.S.C. 4332(2)(C). As also required by Section 4332(2)(C), the Navy consulted with relevant federal agencies before issuing that statement, which accompanied its proposal and is available with appropriate agency comments under FOIA. Accordingly, while the additional requirements specified by CEQ regulations have not been met, the Navy has effectively complied with NEPA's minimum statutory mandate under Section 4332(2)(C). See, *e.g.*, *Kleppe* v. *Sierra Club*, 427 U.S. 390, 406 & n.15 (1976).

Respondents ultimately lose sight of the fact that NEPA is a procedural statute that does not impose any substantive limit on agency action or require the agency to mitigate any resulting environmental consequences. *Methow Valley*, 490 U.S. at 350, 353 & n.16. NEPA should not be construed to demand the utmost adherence to the normal EIS procedures (which would not prevent any agency decision) where, as here, agency action in emergency circumstances is needed to avert substantial injury to the public interest *before* that process can be completed and where suitable alternative arrangements, including a timetable for completing an EIS, are approved by the agency charged with administering NEPA.

2. The Navy's alternative arrangements do not violate constitutional separation of powers

Relying on *Hayburn's Case*, 2 U.S. 408 (1792), NRDC contends that the Navy's acceptance of alternative arrangements approved by CEQ violated separation of powers on the ground that CEQ usurped Article III power by reviewing the district court's injunction. NRDC Br. 24-29. That argument, which the lower

courts declined to reach, Pet. App. 56a n.47, 123a, is without merit.

In *Hayburn's Case*, five Justices, sitting as circuit judges, concluded that circuit courts could not comply with a statute directing them to determine the appropriate amount of veterans' pensions because the statute gave the Secretary of War discretion to adopt or reject such determinations. See *Miller* v. *French*, 530 U.S. 327, 342-343 (2000). As this Court has explained, *Hayburn's Case* "stands for the principle that Congress cannot vest review of the decisions of Article III courts in officials of the Executive Branch." *Id.* at 343 (citation omitted).

The rule of *Hayburn's Case* is inapposite here. First, in determining whether the longstanding administrative requirements of Section 1506.11 were met, CEQ in no practical, much less legal, sense sat as a court of review with respect to the district court's preliminary injunction, which rested on a determination that the Navy's EA did not comply with requirements under NEPA. Rather, CEQ addressed the distinct question of compliance with an *alternative* mechanism and determined that the requisite "emergency circumstances" were present. Pet. App. 240a; see *id.* at 247a-248a. The fact that the government returned to district court to lift the injunction, which continued in force after CEQ's determination, underscores that CEQ did not impermissibly exercise judicial power to "review" the injunction.

Second, "prospective relief is subject to the continuing supervisory jurisdiction of the court, and therefore may be altered according to subsequent changes in the law." *Miller*, 530 U.S. at 347. The Navy's acceptance of alternative arrangements approved by CEQ altered the relevant law that the Navy was required to follow under

NEPA and CEQ's regulations—on the new assumption, given the district court's decision, that the training would have a significant environmental impact. It was then for the courts to decide whether the Navy's actions were appropriate under that legal framework, according deference to CEQ's interpretation of NEPA and its implementing regulations and reviewing Executive determinations concerning the need for training using MFA sonar and the resulting impact on marine mammals under the arbitrary and capricious standard in 5 U.S.C. 706(2)(A). That is a routine Article III task. The absence of any impermissible interference with judicial power is especially clear here because the district court had not even entered a final judgment in the case. See *Plaut* v. *Spendthrift Farm, Inc.*, 514 U.S. 211, 218-219, 227-228 (1995).

NRDC asserts (at 29) that a change in the law warranting the vacatur of equitable relief can result only from an Act of Congress, but it provides no reason why Executive action—exercising authority granted by Act of Congress—cannot have the same effect or would infringe judicial power any more than legislation. If, for instance, an action is enjoined as unlawful, the subsequent issuance of an otherwise valid regulation or permit authorizing that action could warrant lifting the injunction. Or, if the legal basis for an injunction is later undermined by agency action construing relevant law so as to make the "obligations placed upon the parties * * * impermissible under [that] law," *Miller*, 530 U.S. at 347 (citation omitted), there would be no basis for the injunction's prospective application. Cf. *National Cable & Telcomms. Ass'n* v. *Brand X Internet Servs.*, 545 U.S. 967, 980-985 (2005). Similarly, this Court has acknowledged that the President could exercise author-

ity under the Clean Water Act to exempt agency action that a court previously enjoined. *Weinberger* v. *Romero-Barcelo*, 456 U.S. 305, 319 (1982). CEQ's approval of alternative arrangements for NEPA compliance is not constitutionally different.

3. NRDC's remaining challenges to CEQ's determination were waived below and lack merit

NRDC's contentions (at 21-23, 30-32, 36-37) regarding collateral estoppel, CEQ's adjudicatory authority, and 5 U.S.C. 555(b) are raised for the first time in NRDC's merits brief to this Court and therefore have been waived. See *Baldwin* v. *Reese*, 541 U.S. 27, 33-34 (2004); *Knowles* v. *Iowa*, 525 U.S. 113, 116 n.2 (1998). In any event, the contentions lack merit.

First, CEQ was not collaterally estopped from approving alternative arrangements for "emergency circumstances" by the district court's finding that the Navy could adequately "train under the challenged mitigation measures" ordered by the court. NRDC Br. 22-23. The matters to be addressed by the Executive officials charged with training Navy personnel and implementing NEPA are inherently different from those to be weighed by a district court incidental to deciding whether equitable relief is warranted, and the Constitution and Congress have vested the former determinations with the responsible Executive Branch officials. *Department of the Navy* v. *Egan*, 484 U.S. 518, 529 (1988); *FCC* v. *Pottsville Broad. Co.*, 309 U.S. 134, 141-146 (1940). Moreover, "findings of fact and conclusions of law made by a court granting a preliminary injunction are not binding at trial on the merits," *University of Tex.* v. *Camenisch*, 451 U.S. 390, 395 (1981); Fed. R. Civ. P. 54(b), and they therefore have no preclusive effect, *Com-*

munity Nutrition Inst. v. *Block*, 749 F.2d 50, 56 (D.C. Cir. 1984) (Scalia, J.).

Second, respondents' contention that CEQ does not have "adjudicatory authority" is irrelevant. No formal adjudication under 5 U.S.C. 554 was required for CEQ or the Navy to invoke Section 1506.11. Indeed, it would be utterly unrealistic to expect any sort of extensive agency proceedings in the "emergency circumstances" covered by the regulation. CEQ's role was instead to consider the submissions by the Navy and the National Marine Fisheries Service (NMFS) and determine whether the prerequisites for application of CEQ's own regulation were satisfied, and the Navy's role was to decide whether to accept the alternative arrangements advanced by CEQ. No more formal "adjudicatory" power was required simply because a federal district court previously had preliminarily enjoined the same series of exercises on other grounds.

Finally, NRDC's assertion that it was entitled to notice of CEQ's consideration of alternative arrangements is misplaced. NRDC Br. 36-38. Such notice is not required by the Administrative Procedure Act (APA). In providing that "an interested person may appear before an agency * * * for the presentation, adjustment, or determination of an issue" "[s]o far as the orderly conduct of public business permits," 5 U.S.C. 555(b), the APA does not require that agencies provide public notice of such action. Compare 5 U.S.C. 553(b) and (c), 554(b) (requiring notice in other contexts). The APA's legislative history confirms that Section 555(b) "merely [requires agencies] to receive the presentations of those who seek to make them" and "does not require agencies to give notice to all who may be affected." S. Rep. No. 752, 79th Cong., 1st Sess. 19 (1945); see *Attorney Gen-*

eral's Manual on the Administrative Procedure Act 63 (1947) (provision does not "requir[e] an agency to give notice of its proposed action" or "to invite appearances by interested persons").[2]

II. THE PRELIMINARY INJUNCTION IS FUNDAMENTALLY INCONSISTENT WITH ESTABLISHED EQUITABLE PRINCIPLES

Even assuming that respondents have established a likelihood of success on the merits, the preliminary injunction must be vacated because it is inconsistent in several fundamental respects with established equitable principles governing the grant of injunctive relief.

A. The District Court Improperly Disregarded The Balance Struck By Congress

In the Marine Mammal Protection Act (MMPA), Congress specifically determined that the general interest in marine-mammal protection must yield to the demands of military readiness and national security where, as here, the Secretary of Defense has so determined and notified Congress. See Gov't Br. 35-37. Respondents incorrectly contend that the enactment of 16 U.S.C. 1371(f) in 2003 is irrelevant in determining whether the preliminary injunction was appropriate. NRDC Br. 38-40; CCC Br. 14-23. To be sure, this Court does "not lightly assume that Congress has intended to depart from established [equitable] principles." *Romero-Barcelo*, 456 U.S. at 313. But with respect to the precise ground on which the court rested its equitable relief, Congress has made clear that the balance of the

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[2] This Court has "repeatedly given great weight" to the *Attorney General's Manual* in construing the APA. *Bowen* v. *Georgetown Univ. Hosp.*, 488 U.S. 204, 218 (1988).

equities associated with the use of sonar for military readiness and marine species protection should be struck in favor of military readiness.

The fact that Congress enacted the controlling provision in the MMPA, rather than NEPA, is of no moment because once Congress has "decided the order of priorities in a given area," courts are without discretion to "reject the balance that Congress has struck in a statute." *United States* v. *Oakland Cannabis Buyers' Coop.*, 532 U.S. 483, 497 (2001) (citation omitted); Gov't Br. 34-35. And this Court has elsewhere held that remedial authority to enforce one statute may be circumscribed by provisions in another statute. See, *e.g.*, *Hoffman Plastic Compounds, Inc.* v. *NLRB*, 535 U.S. 137 (2002). The asserted "harm" to marine mammals the district court credited in granting an injunction therefore is not properly cognizable as a factor supporting an injunction barring use of MFA sonar. That is especially so since the statute the court's injunction was intended to enforce (NEPA) is only procedural and imposes no substantive requirements that could override Congress's judgment in the MMPA.

In amending the MMPA in 2003, Congress was motivated by the wartime goal of "keeping our men and women in uniform alive when they are in combat" and its recognition that, in part because of injunctions like that here, "we are losing * * * our ability to practice our sonar capability," which is a matter of "life and death" for Navy personnel. 149 Cong. Rec. 12,564 (2003) (statement of Rep. Hunter); see Gov't Br. 36-37. Moreover, Congress acted in the wake of an injunction—just like the one at issue here—that was founded in part on an alleged violation of NEPA and that severely discounted the potential harms to national security and the public

interest by enjoining the Navy's use of low-frequency active sonar. *NRDC* v. *Evans*, 232 F. Supp. 2d 1003, 1051, 1055 (N.D. Cal. 2002). Congress presumably believed that it would be preventing the same situation from occurring again, but the Ninth Circuit has allowed just that.

Respondents' observation that Congress did not separately enact an "exemption" from NEPA misses the point. The existence of the "emergency circumstances" regulation already provided a mechanism under NEPA itself to accommodate such situations, as NRDC informed Congress in 1995. Gov. Br. 23 n.4. Moreover, the question of a complete exemption from NEPA is distinct from whether a court, after finding a NEPA violation, may enjoin essential military readiness activities based on its own assessment of military needs and appropriate substantive protections for marine mammals, where, as here, Congress by statute has already specifically struck the balance it deemed appropriate between those precise equities.

Congress authorized the Secretary to take military actions that will harm marine mammals—*regardless of the magnitude* of that harm—when he determines that such action is necessary for national defense. 16 U.S.C. 1371(f). And, by requiring the Secretary to confer with the agencies with marine mammal expertise and by guaranteeing congressional oversight, Congress unmistakably placed the responsibility for properly administering the balance between marine mammals and military readiness squarely within the political Branches.

B. The "Mere Possibility" Of Irreparable Injury Cannot Support The Preliminary Injunction

The injunction is also unfounded because it is the product of the erroneous "mere possibility" standard that the Ninth Circuit uses to evaluate claims of irreparable injury.

1. Respondents' half-hearted defense of the Ninth Circuit's "mere possibility" standard is unavailing. This Court has made clear that a preliminary injunction is an "extraordinary and drastic remedy" for which the movant must provide "substantial proof" making a "clear showing" that such extraordinary relief is necessary. *Mazurek* v. *Armstrong*, 520 U.S. 968, 972 (1997) (per curiam); Gov't Br. 38-39. Respondents do not—and cannot—show how the Ninth Circuit's longstanding practice of granting such extraordinary relief based on the "mere possibility" of harm is consistent with that principle. NRDC Br. 49-50; CCC Br. 26-27. The Ninth Circuit's "mere possibility" threshold is fundamentally inconsistent with considerations that have for centuries governed the entry of injunctive relief.

Respondents' reliance on *Brown* v. *Chote*, 411 U.S. 452 (1973), and *Doran* v. *Salem Inn, Inc.*, 422 U.S. 922 (1975), is misplaced. Neither case suggests, much less holds, that injunctive relief may be awarded based on a "possibility" of either injury or success. Moreover, respondents' interpretation of *Brown* (like that of several court of appeals decisions) simply confuses two distinct uses of the word "possibility." In fact, the threatened injury in *Brown* was far from a mere possibility. 411 U.S. at 457 (explaining that movant's "opportunity to be a candidate *would* have been foreclosed" without relief) (emphasis added). Likewise, in *Doran*, the Court explained that a plaintiff must meet a "stringent" standard

by showing that "he will suffer irreparable injury" without relief, 422 U.S. at 931, and the parties did not dispute that the plaintiffs "would suffer a substantial loss of business and perhaps even bankruptcy" if relief were denied. *Id.* at 932.

NRDC invokes (Br. 49-50) the sliding scale that some courts use in evaluating a likelihood of irreparable injury. Even assuming that the requisite showing of injury may vary somewhat, however, the Ninth Circuit's "mere possibility" standard, which expressly rejects the need for any "significant threat" of injury, Pet. App. 76a-77a, establishes a threshold that cannot be squared with the extraordinary nature of preliminary relief. Indeed, it renders the likelihood-of-irreparable-injury test virtually meaningless. See Gov't Br. 38-39.

2. Rather than seriously defend the "mere possibility" of harm standard, respondents focus their efforts on arguing that the lower courts did not apply that standard in this case. That contention is unavailing. The record makes clear that both the court of appeals (see Pet. App. 36a, 76a-77a) and the district court (see *id.* at 74a-75a) evaluated respondents' request for injunctive relief through the distorted lens of the "mere possibility" standard. Respondents point to the fact that the court of appeals noted the district court's determination that "irreparable harm to marine mammals will almost certainly result." Pet. App. 87a. But that observation cannot be squared with the court of appeals' acknowledgment that the record contains "no evidence" that marine mammals have been harmed during the 40 years of MFA sonar training in SOCAL, *id.* at 76a. Moreover, the court of appeals held that "NRDC must show the possibility of irreparable harm to its membership," not the environment, *id.* at 75a, and concluded that NRDC

had done so by establishing a mere "possibility" of such harm. *Id.* at 76a-77a. And respondents themselves continue to defend the injunction under that "possibility" standard in this Court. See CCC Br. 25.

a. In any event, the record does not support a finding of anything other than a "mere possibility" of harm. The Ninth Circuit recognized that the record contains "no evidence" that marine mammals have been injured or killed by naval training exercises in SOCAL, Pet. App. 76a, and respondents do not dispute that the Navy has conducted equivalent sonar exercises in SOCAL for over 40 years without any associated harm to marine mammals being observed or documented. Gov't Br. 11, 39-41 & n.7. Because the areas in SOCAL where "most operations have occurred are monitored quite extensively for marine mammals" and those waters contain large marine-mammal populations, the absence of any such data over decades of training presented NMFS's experts with "evidence [they] could not ignore" indicating that the Navy's training has not had any measurable effect on the fitness of marine mammals in SOCAL. J.A. 541-542, 629; see J.A. 231-232, 511-512. Indeed, the evidence indicates not only that SOCAL's populations of non-listed mammals like common dolphins are increasing, E.R. 153, 159, but also that no systematic declines have resulted in marine-mammal stocks, and that SOCAL's endangered species populations are stable or increasing. J.A. 232, 516-517, 541-542; cf. J.A. 147. That evidence itself dispels any reasonable basis for respondents' purported irreparable injury, let alone a near certainty of such harm.

Significantly, the district court *upheld* NMFS's expert "analysis of acoustic impacts" on species in SOCAL that are listed as endangered or threatened under the

Endangered Species Act, finding that NMFS's biological opinion (J.A. 90-106.7; E.R. 771-943) was based on the "best scientific and commercial data available." Pet. App. 215a-216a. That court-endorsed analysis concludes that (1) listed species (including blue, humpback, and sperm whales) will likely experience only "temporary" behavioral reactions that are "not likely to affect the reproduction, survival or recovery of these species," and (2) no members of such species are anticipated to die or sustain any "harm or injury." J.A. 106.1-106.2.

NMFS similarly determined that members of the remaining non-listed marine mammal species in SOCAL (including beaked whales) would likely exhibit "temporary behavioral responses" from the Navy's modeled sonar exposure and, while acknowledging scientific uncertainty surrounding beaked-whale impacts, that the Navy's exercises through January 2009 would not likely result in any "adverse population effects for any of these marine mammal[s]." Pet. App. 258a; Gov't Br. 41-43.[3] The district court recognized that it was "not equipped" to "conduct a de novo review of the scientific conclusions of an agency," Pet. App. 205a, yet neither it nor the Ninth Circuit gave NMFS's expert determination the substantial weight it was due. Pet. App. 65a n.53, 136a.[4]

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[3] NRDC incorrectly asserts (at 42) that the government "effectively" conceded that the exercises in this case would have a significant environmental impact. Because the district court's January 2008 injunction imperiled the Navy's next, impending large-scale exercise, the Navy sought emergency alternative arrangements on the basis of the *court's* finding of a likelihood of significant impact. See Gov't Br. 15, 32-33.

[4] Notably, portions of the district court's decision reflect a fundamental misunderstanding of relevant concepts such as decibel measurements. *E.g.*, Pet. App. 100a & n.6. A decibel level reflects the ratio of a measured quantity to a reference quantity, *i.e.*, $dB = 10 \log_{10} (Q / Q_{ref})$.

Rather, as respondent CCC acknowledges (Br. 9, 27), the district court largely relied upon the Navy's analysis and modeling in its EA. Pet. App. 100a, 157a, 162a-163a, 204a-205a. Respondents contend that the model's prediction of 84,764 annual Level-B harassment exposures (roughly 170,000 over two years), J.A. 224, is an "extraordinary number" relative to the size of populations in SOCAL. NRDC Br. 42.[5] In context, however, the

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See Lawrence E. Kinsler et al., *Fundamentals of Acoustics* 130 (4th ed. 2000). Just as 32 degrees is not meaningful without knowing whether the "degrees" are Fahrenheit or Celsius, sound intensity levels expressed in decibels cannot be directly compared without applying a correction to account for the different reference intensities used in air (roughly 10^{-12} W/m^2) and water (roughly 6.76×10^{-19} W/m^2), which themselves are functions of the reference pressures in and acoustic impedances for air and water. See *id.* at 125-126, 130-131.

The district court's comparison of the Navy's total received energy flux density level (EL) threshold for Level-B harassment in water (expressed in "dB re 1 μPa^2-s") to acceptable workplace sound levels *in air* under OSHA regulations not only ignores the critical difference in decibel references, but also compares different *types* of quantities. See Pet. App. 152a & n.4; E.R. 214, 218. To compare the Navy's harassments thresholds (in water) of 173, 195, and 215 dB re 1μPa^2-s (see J.A. 166; E.R. 220) one would have to examine total received energy flux densities in air of roughly 111, 133, and 153 dB re 20μPa^2-s. See generally *Fundamentals of Acoustics* 130-131. The district court's apples-to-oranges comparison therefore provides no support for the injunction.

[5] These figures are due in part to the generous assumptions made in the EA. The model approximated the number of exposures for each species by estimating the ocean area for which the cumulative received sound energy from sonar pings per day of exercises would reach the model's Level-A and Level-B thresholds and multiplying that area by the population density for each species. E.R. 218, 860-862. Due to practical limitations inherent in that approach, the output over-estimated the number of marine-mammal exposures by (1) assuming that mammals are static and thus will not move away from sonar sources, (2) assuming that the Navy's own mitigation measures are not used, and (3)

Navy's EA makes clear that the number reflects instances of sonar exposure resulting in only a temporary, short-term, non-injurious response. Gov't Br. 9, 45 n.9. A temporary or non-injurious response is not *irreparable* harm.

While respondents dispute the EA's own description of its results, the evidence overwhelmingly confirms it. A full 86% (72,772) of the annual Level-B exposures involve common dolphins, J.A. 223-224, which are abundant in SOCAL and the population of which has *increased* notwithstanding decades of sonar exercises. E.R. 153, 159; cf. Gov't Br. 9 n.2. Other species predicted to have such temporary behavioral reactions likewise showed no special sensitivity to sonar exposure. See, *e.g.*, J.A. 520-521, 524 (harbor porpoise). And, while respondents cite to the EA's prediction of Level-B exposures for endangered blue whales as justifying injunctive relief (NRDC Br. 42-43), the district court upheld NMFS's conclusion that *no* member of an endangered or threatened species (including blue whales) is likely to be killed or injured or to sustain any lasting harm based on the model's prediction of short-term behavioral responses to sonar exposure. See pp. 19-20, *supra*. That conclusion is confirmed by the fact that the population of blue whales has been stable or increasing in SOCAL over the past decade. J.A. 232, 541.

b. Respondents' failure to demonstrate irreparable injury to any affected species is fatal to the preliminary injunction even assuming a showing of irreparable harm to marine mammals would be enough. But to obtain an injunction, plaintiffs must demonstrate that *they*—not

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calculating daily exposures, which can greatly exceed the number of affected mammals (because a single animal may account for multiple exposures). J.A. 171, 175-176, 184.

the environment—will suffer irreparable harm. Gov't Br. 43-44; cf. *Lujan* v. *Defenders of Wildlife*, 504 U.S. 555, 563 (1992) (plaintiff challenging federal action allegedly threatening species' extinction lacks standing unless she both proves threat to species and that she is "'directly' affected apart from [her] 'special interest' in th[e] subject"). While NRDC argues that the "entire species" need not be jeopardized, NRDC Br. 45-46, there must at least be harm to the species population with which the members interact. Cf. *Amoco Prod. Co.* v. *Village of Gambell*, 480 U.S. 531, 535, 538 n.5, 545 (1987) (addressing purported long-term damage to "subsistence resources" used by plaintiff villages for hunting, fishing, and consumption and stating that "the balance of harms will usually favor the issuance of an injunction" if threatened long-term or permanent "[e]nvironmental injury" is "sufficiently likely"). Because respondents' members claim benefits from viewing mobile wildlife species, unless a significant long-term, population-level effect meaningfully and irreparably degrades their ongoing viewing activities, any environmental harm will not significantly impact—much less irreparably injure—respondents. See Gov. Br. 43-44.

c. In the end, respondents rest their case on potential harm to the elusive and notoriously difficult-to-study beaked whale to justify the injunction. The Navy's model predicted only short-term, non-injurious Level-B exposures for beaked whales, but tabulated those exposures as non-lethal "Level A" exposures based on a "policy" decision to reflect scientific uncertainty surrounding beaked-whale responses. Gov't Br. 9-10, 44-45.[6] Re-

[6] NRDC incorrectly suggests that 436 predicted (Level-B) exposures for Cuvier's beaked whales will affect one-third of the minimum west-

spondents seek to litigate that scientific uncertainty. Respondents claim, for instance, that beaked-whale injuries would not likely result in strandings in SOCAL, population declines would be difficult to detect, and SOCAL is a "key" area for beaked whales. NRDC Br. 3, 45. However, respondents base their claims on research from mass strandings of live beaked whales at significant distances from temporally correlated sonar sources, *e.g.*, J.A. 691, 701, and the absence of *any* such stranding in SOCAL over 40 years is dispositive.

Moreover, "beaked whales occur in all major seas," and the 23 so-called "key" areas proposed for targeting conservation efforts involve vast swaths of coastal territory worldwide, including the northeastern North American continental shelf and California's *entire* coastal shelf. J.A. 714-716. Ultimately, "[l]ess is known about many extant beaked whale species than about some mammals that became extinct thousands of years ago," J.A. 714, but that uncertainty obviously does not affirmatively establish the requisite likelihood of irreparable injury to beaked whale stocks in SOCAL. Gov't Br. 41-42; cf. J.A. 547-557. To the contrary, the *absence* of scientific information about beaked whales and their behavioral responses to sonar in SOCAL underscores the speculative basis of the harm asserted by respondents and the fact that respondents have not met their burden

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coast stock estimate of 1121 whales (J.A. 185). NRDC Br. 5. NRDC itself recognizes that exposures cannot be equated to the number of mammals affected because the EA assume that one marine mammal could be subjected to multiple exposures. *Ibid.* (attributing 900 Level-B exposures to estimated minimum population of 119 pygmy sperm whales); cf. p. 21 n.5, *supra*.

of proof in establishing irreparable injury even as to beaked whales.[7]

Finally, even if respondents' predictions regarding beaked whales were correct, they would nevertheless fail to establish that *their members* would in turn sustain irreparable injury without preliminary relief. Not one of NRDC's members or declarants, not even the well-traveled Mr. Cousteau, contends that he or she has seen or worked with beaked whales or has any plans to do so. J.A. 384-466. Nor would it be reasonable to assume that their recreational and other activities involving "whales" generally concern beaked whales. Beaked whales prefer "deep waters beyond the shelf edges where relatively few research vessels venture," J.A. 714, and NRDC's own expert stated that beaked whales are rarely seen even by trained lookouts and stay submerged for long periods, making their detection unlikely even with aerial monitoring. J.A. 488-489.

C. The Balance Of Hardships And The Public Interest Cannot Support The District Court's Injunction

Respondents' contention that the district court permissibly balanced the parties' hardships and the public interest falls far short. For instance, respondents defend the district court's and the Ninth Circuit's total failure to consider the President's determination by asserting that the President was either "irrelevant" (CCC Br. 36) or announced only the general importance of the

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[7] The record does contain evidence that beaked whales have stranded in SOCAL, but those strandings were not tied to sonar use (and even respondents do not argue to the contrary). See Gov't Br. 41-42. The fact that there is evidence of beaked-whale strandings in SOCAL that are not linked to sonar use undermines respondents' reliance on the assertion that injuries to beaked whales would be undetectable.

enjoined exercises without addressing the impact of the injunction itself (NRDC Br. 56 n.18). The President, however, in direct and immediate response to the district court's injunction, determined that it "undermine[d] the Navy's ability to conduct realistic training * * * necessary to ensure * * * combat effectiveness," thereby prompting him to grant an exemption under the Coastal Zone Management Act to "enable the Navy to train effectively." Pet. App. 232a. Given the serious separation-of-powers concerns implicated by the courts' independent assessment of wartime military training needs, the lower courts' total failure to address such a determination by the President—the Commander-in-Chief—alone constitutes an abuse of equitable discretion.

Nor do respondents meaningfully answer the district court's and Ninth Circuit's failure to evaluate the relative *magnitude* of the harms to national security and marine mammals. In any reasonable weighing of the equities, even a small likelihood of failure in matters "essential to national security" (NRDC Br. 52) would outweigh certain harm to respondents' generalized interest in the enjoyment of marine mammals. That conclusion is reinforced by Congress's authorization in the MMPA for taking military action that will harm marine mammals where, as here, the Secretary of Defense determines that such action is "necessary for national defense." See Gov't Br. 35. The Ninth Circuit's observation (echoed by respondents, CCC Br. 44) that the Navy—like a private litigant enjoined in a run-of-the-mill case—could return to court for emergency relief *after* it fails to complete essential military training underscores the courts' failure to properly consider the magnitude of such harm. Gov't Br. 47.

NRDC also misses the point in arguing (at 53) that restrictions on training in surface-ducting conditions are warranted because the Navy has successfully trained in the past when such conditions were *absent*. The Navy cannot control when such conditions are present—in training or in actual hostilities. When such conditions *do* occur during ongoing exercises, however, it is critical for the Navy to train in those conditions because enemy submariners are trained to exploit surface ducting to evade detection. See Pet. App. 299a, 333a. Imposing a 75% reduction in sonar power—even in the absence of any marine mammals—makes realistic training in such circumstances impossible. Gov't Br. 53-54.

Respondents make no effort to defend the Ninth Circuit's reliance on low-frequency active sonar as reflecting the feasibility of a 2200-yard shutdown zone for MFA sonar training. Like the Ninth Circuit (Pet. App. 85a n.67), CCC (at 40 n.10) defends the injunction by pointing to procedures purportedly followed by NATO or the Royal Australian Navy. That approach underscores the dangers of disregarding the professional judgments of the U.S. naval officers who have submitted declarations in this case. Australia has not operated an aircraft carrier since 1982 and possesses no warships similar to the Navy's carrier-like amphibious assault ships, whose protection requires the integrated strike-group training at issue in this case. See Chris Bishop & Chris Chant, *Aircraft Carriers* 62 (2004); 3 *The Australian Centenary History of Defense: The Royal Australian Navy* 225-228, 275-276 (David Stevens, ed. 2001). And NATO does not operate its own strike groups, does not require the type of integrated training at issue here, and, instead, utilizes forces provided and trained by its member nations.

NRDC erroneously suggests (at 54 n.16) that the Navy *voluntarily* ceases sonar use in tactically significant times. The after-action reports that NRDC cites indicate that the Navy has determined (in post-exercise reconstructions of training events) that sonar shutdowns may have adversely affected training operations because, in some cases, an undetected submarine was nearby. But those reports do not indicate whether the shutdowns were voluntary and, more importantly, they demonstrate the real risks of imposing shut-down zones. Indeed, the reports' explanation that submarines were *not* detected reinforces Admiral Locklear's explanation that, because the "stakes are too high," commanders never voluntarily surrender contact with a submarine and stop sonar transmissions only in what they perceive—at the time—to be tactically insignificant contexts. Pet. App. 355a-356a.

Respondents' assertion that the Navy's prior mitigation measures support the injunction's 2200-yard shutdown zone is equally without merit. CCC (Br. 34-35), for instance, relies on a telephone discussion with Navy personnel regarding experimental research at Monterey Bay, which has no relationship to the strike-group exercises here. Cf. J.A. 284-285. NRDC (Br. 7-8), in turn, notes that the Navy for a time in the past reduced sonar power when marine mammals were spotted within a 2000-meter zone *if* significant surface-ducting conditions were present. J.A. 373, 500-502. That measure, which was less restrictive than the district court's injunction, was found to restrict realistic training and to be difficult to employ uniformly and not proven to protect mammals. J.A. 327, 503, 505; Pet. App. 299a-300a. It was therefore halted after conferring with NMFS. See *id.* at 219a, 225a-226a.

In the end, assessing the risk to critical Navy exercises is a matter of military judgment, and the President and the Nation's top naval officers have determined that the restrictions imposed by the preliminary injunction unacceptably risk the accomplishment of missions that are in the paramount interest of the United States. Gov't Br. 13-14. The Ninth Circuit's willingness to independently evaluate that judgment on the basis of factors reflecting a layman's misunderstanding of vital military matters is profoundly misguided and warrants reversal by this Court.

* * * * *

For the foregoing reasons and those stated in our opening brief, the judgment of the court of appeals should be reversed, and the case should be remanded with instructions to vacate the preliminary injunction.

Respectfully submitted.

GREGORY G. GARRE
Acting Solicitor General

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AMICUS CURIAE BRIEF

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IN THE

Supreme Court of the United States

DONALD C. WINTER, Secretary of the Navy, *et al.*,
Petitioners,

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

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IN THE

Supreme Court of the United States

No. 07-1239

DONALD C. WINTER, Secretary of the Navy, *et al.*,
Petitioners,

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

BRIEF OF *AMICI CURIAE*, CALIFORNIA ASSEMBLY MEMBER JULIA BROWNLEY AND CALIFORNIA SENATOR CHRISTINE KEHOE

INTERESTS OF *AMICI CURIAE*[1]

Amici are California legislators with particular interest in effectively managing and preserving California's natural resources.

[1] No counsel for a party authored the brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of the brief. All parties have consented in writing to the filing of this brief, and the consent letters have been filed with the Clerk.

Assembly Member Julia Brownley represents the 41st District in the California Assembly. She has made environmental protection a top priority, sitting on both the Assembly Natural Resources Committee and on the Budget Subcommittee 3 on Environmental Resources.

Senator Christine Kehoe represents the 39th District in the California Senate. Senator Kehoe has also made environmental protection a top priority. She is the chairperson of the Energy, Utilities, and Communications Standing Committee, and she sits on the Natural Resources and Water Standing Committee, the Coastal Protection and Watershed Conservation Select Committee, and the Joint Committee on Fisheries and Aquaculture.

Assembly Member Brownley authored and Senator Kehoe was the Senate floor manager of California Assembly Joint Resolution 68, adopted August 21, 2008, and enrolled on September 8, 2008, by which "the Legislature of the State of California respectfully requests the President and the United States Navy to abide by the laws governing usage and effects upon the coastal regions of California and adopt the guidelines presented by the California Coastal Commission for training operations off the coast of southern California with respect to sonar usage and marine wildlife[.]"

As reflected in Assembly Joint Resolution 68, Assembly Member Brownley, Senator Kehoe, and the California Legislature have an expressed interest in both the resolution of this case, and in preserving California's voice and role in managing California's natural resources.

SUMMARY OF ARGUMENT

The National Environmental Policy Act ("NEPA") evinces a "manifest concern with preventing uninformed action" by federal agencies, "ensur[ing] that the agency will not act on incomplete information only to regret its decision after it is too late to correct." *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 (1989). Uninformed federal actions pose a substantial threat to the interests of the States in conserving their natural resources and environment. Congress has designed NEPA as a cooperative federalism statute to enable States to defend those interests, even in areas where state law has no sway, for "the broad dissemination of information mandated by NEPA permits the public and other government agencies to react to the effects of a proposed action at a meaningful time." *Id.* The Navy's position radically undermines NEPA and the protections it affords to States. NEPA is a flexible statute that accommodates federal government exigencies, but, contrary to the Navy's claims, nothing in the Council of Environmental Quality ("CEQ") "emergency-circumstances" regulation permits the end-run around the district court's preliminary injunction that the Navy attempts here. The CEQ regulation does not apply after the agency has concluded final action under NEPA and a federal district court has assumed jurisdiction. Regardless, Congress did not delegate legislative rulemaking power to CEQ so as to authorize the Navy to act in derogation of its statutory obligations.

ARGUMENT

A. California Has a Strong and Established Interest in Protecting Its Natural Resources.

Consistent with "the structure and limitations of federalism," the States have "great latitude under their police powers to legislate as to the protection of the lives, limbs, health, comfort and quiet of all persons." *Gonzales v. Oregon*, 546 U.S. 243, 270 (2006) (italics and internal quotation marks omitted). "As long as a State does not needlessly obstruct interstate trade or attempt to 'place itself in a position of economic isolation,' it retains broad regulatory authority to protect the health and safety of its citizens and the integrity of its natural resources." *Maine v. Taylor*, 477 U.S. 131, 151 (1986) (quoting *Baldwin v. G.A.F. Seelig, Inc.*, 294 U.S. 511, 527 (1935)). This Court has recognized that "the State's interest in preserving its waters was well within its police power," *Sporhase v. Nebraska ex rel. Douglas*, 458 U.S. 941, 946 (1982), and that "[u]nquestionably the States have broad trustee and police powers over wild animals within their jurisdictions." *Kleppe v. New Mexico*, 426 U.S. 529, 545 (1976); *see also Hughes v. Oklahoma*, 441 U.S. 322, 337 (1979) ("We consider the States' interests in conservation and protection of wild animals as legitimate local purposes similar to the States' interests in protecting the health and safety of their citizens."). Without doubt, California's police powers include the authority (and obligation) to protect the State's coastal zone and marine mammals.

1. Congress Has Structured Most Federal Environmental Legislation To Recognize And To Promote States' Interests In Environmental And Natural Resource Protection.

Because of the strength of state interests in protecting the environment and natural resources, most federal environmental laws have been designed by Congress in accordance with "cooperative federalism" principles, "in which federal and state authorities work together to achieve national goals." Robert V. Percival, *Environmental Federalism: Historical Roots and Contemporary Models*, 54 MD. L. REV. 1141, 1178 (1995); *see, e.g., Arkansas v. Oklahoma*, 503 U.S. 91, 101 (1992) ("The Clean Water Act anticipates a partnership between the States and the Federal Government animated by a shared objective: 'to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'") (quoting 33 U.S.C. § 1251(a)); *Hodel v. Virginia Surface Mining and Reclamation Ass'n., Inc.*, 452 U.S. 264, 289 (1981) ("[T]he Surface Mining Act establishes a program of cooperative federalism that allows the States, within limits established by federal minimum standards, to enact and administer their own regulatory programs, structured to meet their own particular needs.").[2] Congress' continued recognition of the

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[2] *See also California v. United States*, 438 U.S. 645, 650 (1978) ("If the term 'cooperative federalism' had been in vogue in 1902, the Reclamation Act of that year would surely have qualified as a leading example of it."); *Nat'l Parks Conservation Ass'n., Inc. v. Tennessee Valley Auth.*, 480 F.3d 410, 412 (6th Cir. 2007) (". . . the [Clear Air Act] employs a system of cooperative federalism . . ."); *Northwest Envtl. Def. Ctr. v. Bonneville Power Admin.*, 477 F.3d 668, 674 (9th Cir. 2007) ("[T]he [Bonneville Project] Act establishes an innovative system of cooperative federal-

States' role in realizing national environmental policies is a testament to Congress' understanding that although environmental issues, when aggregated, create a need for national policy, environmental issues are most often experienced, in the first instance, at the local level.[3]

Congress has pursued cooperative federalism in the principal federal statute protecting the nation's coastal lands and waters, the Coastal Zone Management Act ("CZMA"). The purpose of the CZMA is "to preserve, protect, develop and whenever possible, to restore or enhance, the resources of the Nation's coastal zone" of the United States. 16 U.S.C. § 1452(1). Congress intended the legislation to "enhance state authority by encouraging and assisting the states to assume planning and regulatory powers over their coastal zones." *California Coastal Comm'n v. Granite Rock Co.*, 480 U.S. 572, 592 (1987) (quoting S. Rep. No. 92-753, at 1 (1972), *reprinted in*, 1972 U.S.C.C.A.N. 4776). To that end, the statute provides that each federal agency activity "within or outside the coastal zone that affects" a state's coastal zone "shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable

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ism under which the states, within limits provided in the Act, can represent their shared interests in the maintenance and development of a power supply in the Pacific Northwest and in related environmental concerns.").

[3] *See also* Robert L. Fischman, Jaelith Hall-Rivera, *A Lesson for Conservation from Pollution Control Law: Cooperative Federalism for Recovery Under The Endangered Species Act*, 27 COLUM. J. ENVTL. L. 45, 139 (2002) ("The Clean Air Act recognizes that, without state and local partners, the federal government is unequipped to respond to place-based environmental problems that arise from the peculiar circumstances of a region's geography and economy.").

policies of approved State management plans." 16 U.S.C. § 1456(c)(1)(A).

The federal government approved California's Coastal Management Program in 1977. *Am. Petroleum Inst. v. Knecht*, 456 F. Supp. 889, 893-94 (C.D. Cal. 1978), *aff'd*, 609 F.2d 1306 (9th Cir. 1979). "Thus, California is authorized by federal law to review specified federal activities for consistency with its Coastal Management Program." *California v. Norton*, 311 F.3d 1162, 1167-68 (9th Cir. 2002).

2. California Has Passed Extensive Legislation To Protect Coastal Resources And To Promote Cooperation With Federal Agencies.

In 1972, the same year Congress adopted the CZMA, the voters of California approved by popular initiative the California Coastal Zone Conservation Act to provide a comprehensive scheme for managing the coastal zone. *CEEED v. California Coastal Zone Conservation Comm'n*, 43 Cal. App. 3d 306 (1974). This initiative was codified by the California legislature in the California Coastal Act of 1976 (the "Coastal Act"). Cal. Pub. Res. Code §§ 30000 – 30900. The Coastal Act declares that "the California coastal zone is a distinct and valuable natural resource of vital and enduring interest to all the people and exists as a delicately balanced ecosystem[;]" and "[t]hat the permanent protection of the state's natural and scenic resources is a paramount concern to present and future residents of the state and nation." Cal. Pub. Res. Code § 30001(a), (b).[4] *Cf. Granite Rock Co.*, 480

[4] "Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain

U.S. at 591 (upholding Coastal Act against claims of preemption by CZMA and federal mining grants).

The California Coastal Commission, the state agency with primary responsibility for protecting California's coastal zone, was created by the Coastal Act to ensure, among other things, "*maximum state involvement in federal activities*" that affect coastal resources:

> To ensure conformity with the provisions of this division, and to provide maximum state involvement in federal activities allowable under federal law or regulations or the United States Constitution which affect California's coastal resources, to protect regional, state, and national interests in assuring the maintenance of the long-term productivity and economic vitality of coastal resources necessary for the well-being of the people of the state, and to avoid long-term costs to the public and a diminished quality of life resulting from the misuse of coastal resources, to coordinate and integrate the activities of the many agencies whose activities impact the coastal zone, and to supplement their activities in matters not properly within the jurisdiction of any existing agency, it is necessary to provide for continued state coastal planning and management through a state coastal commission.

Cal. Pub. Res. Code § 30004(b).

California agencies other than the Coastal Commission also have responsibility for protecting Cali-

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the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes." Cal. Pub. Res. Code § 30230.

fornia's coastal resources. For example, the Marine Life Protection Act ("MLPA") (Cal. Fish & Game Code § 2850 *et seq.*) directs the California Department of Fish and Game ("DFG") to design and manage a network of marine protected areas ("MPAs") in order to protect marine life and habitats, marine ecosystems, and marine natural heritage, as well as improve recreational, educational and study opportunities provided by marine ecosystems.[5] The MLPA declares that "California's extraordinary marine biological diversity is a vital asset to the state and nation. The diversity of species and ecosystems found in the state's ocean waters is important to public health and well-being, ecological health, and ocean-dependent industry." Cal. Fish & Game Code § 2851(b). Mindful of the Navy's training exercises, the MLPA directs DFG to "confer as necessary with the United States Navy regarding issues related to its activities." Cal. Fish & Game Code § 2863. The Navy's mid-frequency SOCAL testing range occurs within many of California's Marine Protection Areas.[6]

3. The Navy's Actions Flout California State Interests.

As required by the CZMA, the Navy consulted with the California Coastal Commission regarding the

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[5] Related legislation includes the Marine Life Management Act of 1998, 1999 Cal. Stat. Chap. 1052; the Marine Managed Areas Improvement Act of 2000, 2000 Cal. Stat. Chap. 385 (codified at Cal. Pub. Res. Code § 36601-36700.); and the California Ocean Protection Act of 2004, 2004 Cal. Stat. Chap. 719.

[6] Sixteen Marine Protection Areas within Los Angeles, Orange and San Diego Counties are affected by the Navy's SOCAL training program. *See*, "Existing Marine Protected Area Maps and Coordinates," *available at* http://www.dfg.ca.gov/mlpa/maps.asp; J.A. 111-112, 113.

consistency of the mid-frequency active sonar exercises with California's federally approved coastal management plan. The California Coastal Commission understandably conditioned its consistency finding on the Navy implementing reasonable operating standards, considering that the Navy had concluded in the Environmental Assessment ("EA") required by NEPA that the training exercises would result in approximately 170,000 "takes" of protected species. J.A. 223-224. One week after the district court entered a preliminary injunction under NEPA and the CZMA, the Navy sought and obtained a presidential exemption from the CZMA, App. 231a-232a, and an emergency authorization from the CEQ to make alternative arrangements for NEPA compliance, App. 233a-249a. In so doing, the Navy rode roughshod over California's long-recognized interests in its coastal zone and natural resources and sound principles of cooperative federalism.

The California legislature has condemned the Navy's refusal to abide by the California Coastal Commission's reasonable conditions. It adopted a joint resolution authored by Assembly Member Brownley that requests the President and the Navy "to abide by the laws governing usage and effects upon the coastal regions of California and adopt the guidelines presented by the California Coastal Commission for training operations of the coast of Southern California with respect to sonar usage and marine wildlife[.]" *Assembly Joint Resolution No. 68 – Relative to Marine Mammals*, A.J. Res. 68, 2007-08 Reg. Sess. (Cal. 2008).[7]

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[7] In support of this resolution, the legislature declared that "[s]cientific studies have proven a link between the use of mid-frequency sonar and mass deaths, panic, and hearing loss

The Navy at least had a basis in federal law for its CZMA exemption (subject to constitutional concerns expressed by the district court, App. 97a). 16 U.S.C. § 1456(c)(1)(B). But there is simply no basis in any implementing CEQ regulation (much less the statute) to exempt the Navy from its obligations under NEPA, which is likewise designed to safeguard state interests.

B. CEQ Regulations Cannot Be Invoked To Undermine NEPA.

1. NEPA Is a Procedural Statute With Teeth.

The congressional goal in NEPA is plain: "[I]t is the continuing policy of the Federal Government, *in cooperation with State and local governments*, and other concerned public and private organizations, to use all practical means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic and other requirements of present and future generations of Americans." 42 U.S.C. § 4331(a) (emphasis added).

NEPA's "sweeping policy goals" are "realized through a set of 'action-forcing' procedures that require that agencies take a 'hard look' at environmental consequences[.]" *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (quoting *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976)). "Although these procedures are almost certain to af-

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among marine wildlife, marine mammals in particular" and that "[t]he standards proposed by the [Coastal] Commission have been deemed operable and acceptable for past training missions of the Navy and the North Atlantic Treaty Organization[.]" *Id.*

fect the agency's substantive decision, it is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process." *Id.* NEPA, in other words, imposes "essentially procedural" obligations, although procedural obligations with teeth. *Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council*, 435 U.S. 519, 558 (1977).

"When a federal entity such as the Navy undertakes an action that will significantly affect the environment, NEPA requires it to prepare an Environmental Impact Statement (EIS) that takes a 'hard look' at the action's impacts." *Nat'l Audubon Soc'y v. Dep't of the Navy*, 422 F.3d 174, 181 (4th Cir. 2005) (per Wilkinson, J.) (citation omitted). If a federal agency fails to prepare a required environmental impact statement, "[c]ourts . . . routinely recognize[ ] the appropriateness of injunctive relief" to enjoin the proposed activity. *Ross v. Fed. Highway Admin.*, 162 F.3d 1046, 1054 (10th Cir. 1998) (collecting cases).

2. NEPA Compels Cooperation With State and Local Governments in Assessing the Environmental Impact of a Proposed Federal Action.

Like the other federal environmental laws discussed above, NEPA codifies a form of cooperative federalism as positive law. *City of Davis v. Coleman, Jr.*, 521 F.2d 661, 672 (9th Cir. 1975). The Act "expressly contemplates that state and local governments are to play an important role in the effectuation of national environmental policy." *Id.*; *Sabine River Auth. v. United States Dep't of Interior*, 951 F.2d 669, 675-76 (5th Cir. 1992) (same). In numerous places, NEPA mandates "cooperation with the State[s]" in implementing NEPA's procedural re-

quirements. 42 U.S.C. § 4331(a).[8] And, "[t]o better integrate environmental impact statements into State and local planning processes," CEQ's own guidelines require that environmental impact statements "discuss any inconsistency of a proposed action with any approved State or local plan and laws[.]" 40 C.F.R. § 1506.2(d). "Where an inconsistency exists," CEQ directs that "the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law." *Id.; see also Maryland-Nat'l Planning Capital Park and Planning Comm'n. v. U.P.S.* , 487 F.2d 1029, 1037 (D.C. Cir. 1973) ("When . . . the Federal Government exercises its sovereignty so as to override local zoning protections, NEPA requires more careful scrutiny.").[9] The

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[8] By way of example, where NEPA requires a federal agency to prepare an environmental impact statement, NEPA also requires that "[c]opies of . . . the comments and views of the appropriate Federal, State, and Local agencies . . . shall be made available to the President, the Council of Environmental Quality and to the public[.]" 42 U.S.C. § 4332(2)(C). Elsewhere, NEPA permits States to prepare a required environmental impact statement on behalf of a federal official so long as the federal official participates in the drafting. 42 U.S.C. § 4332(2)(D).

[9] *See also* 40 C.F.R. § 1502.19(a) ("Agencies shall circulate the entire draft and final environmental impact statements . . . to (a) Any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved and any appropriate Federal, State or local agency authorized to develop and enforce environmental standards."); 40 C.F.R. § 1503.1(a)(2)(i) ("After preparing a draft environmental impact statement and before preparing a final environmental impact statement the agency shall . . . [r]equest the comments of . . . [a]ppropriate State and local agencies which are authorized to develop and enforce environmental standards[.]"); 40 C.F.R. § 1506.2(b) ("Agencies shall cooperate with State and local

President, himself, has directed "the Departments of the Interior, Agriculture, Commerce, *and Defense* and the Environmental Protection Agency [to] implement laws relating to the environment and natural resources in a manner that promotes cooperative conservation, with an emphasis on appropriate inclusion of local participation in Federal decisionmaking[.]" Exec. Order No. 13352, 69 F.R. 52989 (Aug. 26, 2004) (emphasis added) *reprinted in* 42 U.S.C. § 4332. "It is obvious from a reading of [NEPA,]" then, "that the federal agency developing an [environmental impact statement] is expected to cooperate and consult with local government." *Isle of Hope Historical Ass'n, Inc. v. United States Army Corps of Eng'rs*, 646 F.2d 215, 220 (5th Cir. 1981).

The conduct of the Navy in refusing to prepare an environmental impact statement and in bypassing NEPA's procedural requirements to obtain an "emergency circumstances" exemption under 40 C.F.R. § 1506.11 threatens not just the integrity of the processes NEPA requires but the cooperative federalism NEPA supports. California's environmental agencies such as the California Coastal Commission and the Department of Fish and Game were given no opportunity to comment on the Navy's *ex parte* submission to CEQ (nor were interested legislators like *amici* given notice or the opportunity to comment). The Navy did not provide CEQ with the views of the Commission and the State's cooperative and important dual role in effectuating national environmental policy was effectively abrogated. This deficiency was especially grievous because of the Coastal Commission's expertise in California's coastal waters and its

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agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements[.]")

deep familiarity with the facts of this case and the impact of the Navy's training.

The peremptory actions of the Navy and the CEQ cannot be squared with NEPA. In NEPA, Congress codified its desire to have local input in regulating federal activity having a localized environmental impact. *See, e.g.*, 42 U.S.C. § 4332(2)(C). "The concept of the Act was that responsible officials would think about [the] environment *before* a significant project was launched; . . . that alternatives to such action would be seriously canvassed and assayed; and that any irreversible effects of the proposed action would be identified." *City of Boston v. Volpe*, 464 F.2d 254, 257 (1st Cir. 1972). In upholding NEPA's "think-before-you-act" aim, courts recognize that the failure to prepare an environmental impact statement deprives State and local agencies of their participatory right to comment on the environmental implications of the proposed activity and that such a deprivation is itself grounds to enjoin the federal activity. *See, e.g., City of Davis*, 521 F.2d at 672 (reinstating injunction, in part, because, "failure to file an EIS deprives Davis of its opportunity to participate in the administrative decision making process").

3. Unlike the Marine Mammal Protection Act, NEPA Has No National Defense Exemption.

Within its constitutionally recognized powers, Congress is, of course, free to legislate around federal-state cooperation and give the federal executive branch an unchecked hand in implementing environmental law. *See, e.g., Hodel*, 452 U.S. at 290 ("Congress could constitutionally have enacted a statute prohibiting any state regulation of surface coal mining."). Congress chose to give the executive branch just such authority in the Marine Mammal

Protection Act ("MMPA"). 16 U.S.C. § 1371(f).[10] But, Congress has given the executive branch no such authority in NEPA.

The Navy's argument regarding the MMPA and the implications it may or may not raise regarding Congress' substantive order of priorities is beside the point. NEPA commands that a federal agency must consider, study, and analyze the environmental implications of its actions before it acts. *Robertson*, 490 U.S. at 350; *Volpe*, 464 F.2d at 257. It may be true that the MMPA recognizes the discretion to favor national-security interests over environmental concerns in certain circumstances. That legislative balancing does not, however, suggest that the Navy may bypass its procedural obligations to study and to consult with State and local governments before acting.[11]

NEPA and the MMPA prescribe different kinds of obligations – one procedural, the other substantive. The MMPA's recognition of a discretionary exemption to a substantive rule of law does not, in itself, suggest an implied exception to NEPA's procedural goals and Congress' desire for federal-state cooperation. *See Morton v. Mancari*, 417 U.S. 535, 549 (1974) (applying the "'cardinal rule . . . that repeals by implication are not favored'") (quoting *Posadas v. National City Bank of New York*, 296 U.S. 497, 503 (1936)). To find otherwise would overrule this

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[10] Congress created a similar executive branch opt-out to the Coastal Zone Management Act. *See* 16 U.S.C. § 1456(c)(1)(B).

[11] *See also Robertson*, 490 U.S. at 349 ("Publication of an EIS, both in draft and final form, also serves a larger information role. It gives the public the assurance that the agency has indeed considered environmental concerns in its decision making process, . . . and, perhaps more significantly, provides a springboard for public comment.") (citations omitted).

Court's earlier holding that NEPA requires the preparation of an environmental impact statement for all major federal actions except those where an "unavoidable conflict" in statutory authority exists. *See Flint Ridge Dev. Co. v. Scenic Rivers Ass'n of Oklahoma*, 426 U.S. 776, 777 (1976).

No such unavoidable conflict exists here. Instead, the MMPA and NEPA are easily reconcilable. The fulfillment of NEPA's procedural goals through the preparation of an environmental impact statement, informed by State and local concerns, provides the Navy (or any other agency) the information it needs in fulfilling its statutory responsibilities whether or not an MMPA exemption is being considered or has been adopted. *Weinberger v. Catholic Action of Hawaii/Peace Educ. Project*, 454 U.S. 139, 143 (1981) (describing NEPA's "aims" as (a) "inject[ing] environmental consideration into the federal agency's decisionmaking process" and (b) "to inform the public that the agency has considered environmental concerns in its decisionmaking"). If, after considering the properly prepared environmental impact statement, an agency determines to proceed with the action, NEPA does not stand in its way. *Robertson*, 490 U.S. at 350. The decision will be an informed one, consistent with the goals of both the MMPA and NEPA, and equally serving the goal of cooperative federalism Congress has made part of its environmental law. *J.E.M. AG Supply, Inc. v. Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 143-44 (2001) ("[W]hen two statutes are capable of coexistence, it is the duty of the courts, absent a clearly expressed congressional intention to the contrary to regard each as effective.") (citation omitted).

C. The CEQ's Interpretation Of The Emergency-Circumstances Regulation Is Contrary To Its Plain Meaning.

Notwithstanding the critical importance of NEPA procedures in this cooperative federalism scheme, the Navy secured from the CEQ a post-injunction ruling that its military training needs constitute "emergency circumstances" justifying an exemption from NEPA requirements under 40 C.F.R. § 1506.11. As the district court and Ninth Circuit held, the CEQ's construction (which effectively creates a national defense exception to NEPA) would render section 1506.11 irreconcilable with the statute, and thus cannot be adopted. App. 51a-52a, 119a-120a; *see Concerned About Trident v. Rumsfeld*, 555 F.2d 817, 823 (D.C. Cir. 1976), *as amended* (1977) ("The Navy, just like any other federal agency, must carry out its NEPA mandate 'to the fullest extent possible' and this mandate includes weighing the environmental costs of the Trident program even though the project has serious national security implications.").

In contesting the Ninth Circuit's ruling, the Navy asks this Court to focus simply on the "CEQ's interpretation of the term 'emergency circumstances,'" and to give the agency's construction of that phrase "controlling weight unless it is plainly erroneous or inconsistent with the regulation" itself. U.S. Br. 23 (quoting *Thomas Jefferson Univ. v. Shalala*, 512 U.S. 504, 512 (1994)). But this Court does not construe "phrases in isolation"; it reads statutes and regulations "as a whole." *United States v. Morton*, 467 U.S. 822, 828 (1984). Even if the phrase "emergency circumstances" in section 1506.11 can broadly encompass any situation where an "immediate response is needed to avert a significant impending harm to the

public interest," U.S. Br. 26, this regulation has no application after a federal agency has concluded final action under NEPA and judicial review of that final agency action has commenced under the Administrative Procedure Act. Thus, the fundamental question is not what the phrase "emergency circumstances" means, but whether the regulation purported to authorize CEQ to intervene after the district court had assumed jurisdiction and issued a preliminary injunction.

The answer to the latter is plainly no. The interpretation of a regulation is a "holistic endeavor," and a court must look to the context and purpose of the regulation as a whole. *See United States Sav. Ass'n of Tex. v. Timbers of Inwood Forest Assocs., Ltd.*, 484 U.S. 365, 371 (1988). Section 1506.11 is part of a comprehensive and reticulated scheme for federal agencies to perform their obligations under NEPA. The regulation calls for "[i]dentifying at an early stage the significant environmental issues deserving of study," *see* 40 C.F.R. § 1501.1(d), "to insure that planning and decisions reflect environmental values, to avoid delays later in the process, *and to head off potential conflicts*[.]" *See* 40 C.F.R. § 1501.2 (emphasis added). The regulation calls for the preparation of an environmental impact statement for proposed activities having a major environmental impact, and specifies precise procedures and timelines for interagency and intergovernmental consultation, and for public notice and comment. *See* 40 C.F.R. §§ 1500.3, 1501.4, 1502.1, 1502.4, 1502.5. Section 1506.11 is merely a safety-valve provision that in true emergencies permits the federal agency to consult with CEQ about "alternative arrangements" for complying with NEPA "without observing the provisions of *these regulations*." 40 C.F.R. § 1506.11 (emphasis added).

It is not an exemption from NEPA itself. See App. 234a (CEQ acknowledgement that 1506.11 only authorizes alternatives to the "procedures set forth in [CEQ] regulations"). The regulation further limits the permitted "alternative arrangements" to "controlling the impact of the emergency" while "[o]ther actions remain subject to NEPA review." *Id.*

Thus, section 1506.11, like all of the surrounding CEQ regulations, applies while the agency is in the process of complying with NEPA – *i.e.*, before the agency has taken final agency action under NEPA. But here the Navy purported to conclude its agency action pursuant to CEQ regulations when it issued the "final EA" in February 2007 in which "the Navy determined that its exercises from February 2007 through January 2009 would not have a significant impact on the environment and, accordingly, that NEPA did not require an EIS for those exercises." U.S. Br. 10 (citing J.A. 112, 226-227); 40 C.F.R. §§ 1501.4(e), 1508.13. Whether or not it could have sought emergency dispensation from CEQ regulations in 2007 under section 1506.11, it never did.

The Navy does not contest that its issuance of the final EA was final agency action; indeed, it has conceded the point in admitting the district court's jurisdiction under the APA. In issuing a preliminary injunction, the issue was whether plaintiff had made a substantial showing that the final EA violated NEPA and the APA, and that was an issue in the sole province of the Article III courts. To the extent that the Navy faced any military emergency or public interest from any mitigation measures imposed in the proposed injunction, that was an issue that the Navy was entitled to raise in appealing to the district court's equitable discretion to forego or limit the in-

junction (or on appellate review for abuse of that discretion). *See Weinberger v. Romero-Barcelo*, 456 U.S. 305, 311-13 (1982). But the Navy cannot invoke a regulation, section 1506.11, that plainly has no application once final agency action under NEPA has been concluded. Giving the regulation this common-sense (and indisputable) construction avoids the serious constitutional questions that would arise if indeed the CEQ could sit in revision of the district court's judgment, deciding the very same facts that the district court had already adjudicated in issuing the preliminary injunction. *See* NRDC Br. 24-30; *Hayburn's Case*, 2 U.S. (2 Dall.) 409, 410 n.2 (1792).

D. The CEQ's Invocation of the "Emergency Circumstances" Regulation Does Not Bind The District Court

Even if section 1506.11 is somehow deemed to apply after final agency action, it cannot affect the injunction. The Navy contends that the "CEQ's approval of alternative NEPA arrangements" under that regulation "removed the legal basis for [the preliminary] injunction," *i.e.*, the district court's finding that the plaintiffs were substantially likely to prove a violation of NEPA. U.S. Br. 18. The Navy misconceives the legal effect of CEQ's regulations.

As an initial matter, the CEQ lacks the power to define the law that the district court must apply in resolving whether the statute is violated. Congress did not delegate to the CEQ any legislative rulemaking power to implement NEPA's prescriptions. *See* 42 U.S.C. § 4344 (defining CEQ's powers); *cf.* App. 111a n. 9. Rather, CEQ derived its powers to promulgate NEPA regulations from Executive Order No. 11991 issued by the President, *see Robertson*, 490 U.S. at 354; Nat'l Envtl. Policy Act Regulations,

43 Fed. Reg. 55978 (July 30, 1979), who likewise is not delegated rulemaking power under NEPA. Accordingly, CEQ regulations do not have the "force of law" akin to the regulations of administrative agencies that exercise a delegated legislative authority from Congress, and section 1506.11 is not "binding in the courts" on any issue of statutory violation. *See United States v. Mead Corp.*, 533 U.S. 218, 226-27 (2001). CEQ regulations, because issued in exercise of a power delegated from the President, are of course binding on Executive branch agencies, on the familiar principle that any Executive agency must follow its own rules (including any rule imposed by power of the President). *Morton v. Ruiz*, 415 U.S. 199, 235 (1974) ("it is incumbent upon agencies to follow their own procedures"); *Service v. Dulles*, 354 U.S. 363, 388 (1957). But CEQ regulations are not laws to which a court must bow. Only *Congress* can grant the agency "the authority to promulgate binding legal rules." *Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 980-81 (2005).

Thus, the CEQ's invocation of its emergency-circumstances regulation could not undermine the legal basis of the injunction or compel judicial action in derogation of statutory mandates. The district court's injunction was premised on a showing of a likely violation of the statute: namely, Congress's directive that all federal agencies (including the Navy) "to the fullest extent possible" "shall" produce a "detailed" environmental impact statement before undertaking "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. §§ 4332 and 4332(2)(C). To be sure, CEQ regulations are entitled to "substantial deference" in interpreting NEPA, *see Marsh*, 490 U.S. at 372, and

(if the CEQ's interpretation of its regulation were permissible), the district court could consider that regulation in determining if the Navy had complied with its statutory NEPA obligations "to the fullest extent possible." 42 U.S.C. § 4332. But the deference that CEQ is due is not *Chevron* deference, but only the traditional deference of *Skidmore v. Swift*, 323 U.S. 134 (1944), appropriate to an agency with expertise but not the authority to issue binding legal rules. *See Mead*, 533 U.S. 227-28. *See* NRDC Br. 30-32.

The CEQ's interpretation of the kind of "emergency circumstances" that would relieve a federal agency of its obligations to file an EIS is not a persuasive construction of NEPA. In fact, it is flatly irreconcilable with the statute, as the district court and the Ninth Circuit properly ruled. *See* App. 50a-54a; 121a-122a. Moreover, there is no basis for deference in any event: (1) the CEQ has no expertise in the matter on which it opined, namely, whether the Navy's military training needs constitute an emergency; (2) the CEQ's consideration was rushed and done to further the Navy's litigation interest in defeating the injunction; and (3) the CEQ only considered a partial *ex parte* record compiled by the Navy, and unlike the district court did not benefit from adversarial presentation of the evidence. *See* NRDC Br. 32. Because section 1506.11 lacks the force of law, and because this regulation (as interpreted by the CEQ) is not a persuasive interpretation entitled to weight in interpreting the statute, the district court properly disregarded that regulation in issuing the injunction. *See* NRDC Br. 30-32.

This Court should follow suit. Where the argument the Navy advances is not supported by NEPA, and

where the argument would eliminate the recognized role of State and local governments in cooperative conservation, there is no reason to defer to CEQ or to the Navy. *Maryland Gen. Hosp., Inc. v. Thompson*, 308 F.3d 340, 343 (4th Cir. 2002) ("[D]eference, of course, does not mean blind obedience[.]") (internal citations omitted).

CONCLUSION

The judgment of the court of appeals should be affirmed.

Respectfully submitted,

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AMICUS CURIAE BRIEF

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IN THE

Supreme Court of the United States

DONALD C. WINTER, *et al.*,
Petitioners,

v.

NATURAL RESOURCES DEFENSE COUNCIL, *et al.*,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

BRIEF OF CALIFORNIA FORESTRY ASSOCIATION, AMERICAN FARM BUREAU FEDERATION, AMERICAN FOREST & PAPER ASSOCIATION, CROPLIFE AMERICA, AND NATIONAL ASSOCIATION OF HOME BUILDERS AS *AMICI CURIAE* IN SUPPORT OF PETITIONERS

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INTERESTS OF *AMICI CURIAE*[1]

Amici are trade associations representing companies that operate in the geographical area encompassed by the Ninth Circuit. *Amici* are the California Forestry Association, American Farm Bureau Federation, American Forest & Paper Association, CropLife America, and National Association of Home Builders.

Our members have vital business interests in the two questions presented in the Petition.

Question 2 in the Petition and the Brief for Petitioners concerns whether the "preliminary injunction" standards the Ninth Circuit invoked are "inconsistent with established equitable principles limiting discretionary injunctive relief." Pet. Br. at I. The easily-met standards that the Ninth Circuit applied were developed in cases that enjoined activities of some of *Amici*'s members. *See* App. 37a, 76a (relying on *Earth Island Inst. v. U.S. Forest Serv.*, 442 F.3d 1147 (9th Cir. 2006)). As this illustrates, the availability of preliminary injunctions affects core business interests of *Amici*.

The first and second questions presented also encompass issues of compliance with National Environmental Policy Act ("NEPA") procedures, and whether a curable procedural NEPA default presumptively warrants a substantive injunction.

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[1] Petitioners and Respondents have consented to the filing of this brief in letters on file in the clerk's office. No counsel for a party authored this brief in whole or in part, and no person or entity, other than *Amici*, their members, or their counsel made a monetary contribution intended to fund the preparation or submission of this brief.

The business operations of our members are subject to injunctions if a federal agency is found not to have fully satisfied NEPA. Hence, *Amici* have significant economic interests in the resolution of the NEPA and injunctive relief issues.

Amici's perspective is that, in cases involving environmental issues – such as the marine mammal issues in this case – the Ninth Circuit sets the bar too low for what should be an extraordinary preliminary injunction. We also are of the view that a substantive injunction is not required for every procedural shortcoming under NEPA. Accordingly, *Amici* support Federal Petitioners.

SUMMARY OF ARGUMENT

The Ninth Circuit granted an intrusive preliminary injunction that responsible Executive Branch officials believe compromises our Nation's military preparedness. The panel employed that circuit's easily-met standards for a preliminary injunction. Under one standard, the "mere possibility of irreparable injury" is sufficient. Further, the Ninth Circuit continued its practice of analyzing the public interest and party hardships in a manner skewed heavily towards environmental preservation. As occurred here, those standards and analyses end up preliminarily enjoining a wide variety of important federal programs and productive private activities.

The Ninth Circuit's outlier standards for, and approach to, preliminary injunctions should be reversed. They contravene longstanding equitable principles and this Court's precedents.

ARGUMENT

I. The Ninth Circuit's Equitable Standards And Analyses Set The Bar Too Low For What Should Be An Extraordinary Preliminary Injunction

Any injunction is an "extraordinary remedy" which does not issue "as of course" or for "trifling" injuries. *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 311-12 (1982) (reversing an injunction against Navy training exercises). Preliminary injunctions are subject to the "same" stringent standards "as for a permanent injunction with the exception that the plaintiff must show a likelihood of success on the merits rather than actual success." *Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 542, 546 n.12 (1987) (reversing a preliminary injunction and the Ninth Circuit's presumption that environmental injury is irreparable). "A preliminary injunction is an 'extraordinary and drastic remedy'" that "is never awarded as of right." *Munaf v. Geren*, 128 S. Ct. 2207, 2219 (2008) (quoting 11A WRIGHT, MILLER & KANE, FEDERAL PRACTICE AND PROCEDURE § 2948 (2d ed. 1995)).

Yet, in this case, as in many other Ninth Circuit decisions, what should be an "extraordinary" preliminary injunction has become "ordinary" where some environmental interest is involved. Before many Ninth Circuit panels, the interest in preservation dominates, even though there are

substantial public interests against enjoining a particular federal agency program.[2]

This seems to recur for at least two reasons. First, the Ninth Circuit has adopted easily-met standards for a preliminary injunction. Second, those standards are frequently applied in a manner heavily skewed towards preservation interests.

This approach has the effect, of course, of preliminarily enjoining a greater percentage of beneficial federal programs and private economic activities. The Ninth Circuit's approach also encourages forum shopping. Certain plaintiffs, such as environmental advocacy groups, perceive it is in their interests to select a venue within the Ninth Circuit.

As developed in the subsections below, the Ninth Circuit's approach is contrary to sound equity practice and to this Court's precedents.

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[2] *E.g.*, *Sierra Forest Legacy v. Rey*, 526 F.3d 1228, 1233-34 (9th Cir. 2008) (short-term tree preservation trumps reducing wildfire risks); *Lands Council v. Martin*, 479 F.3d 636 (9th Cir. 2007) (reversing the denial of a preliminary injunction); *Earth Island Institute v. U.S. Forest Serv.*, 442 F.3d 1147, 1177 (9th Cir. 2006) ("preservation of our environment" is "clearly in the public interest" and trumps post-fire restoration and salvage logging); *Washington Toxics Coal. v. EPA*, 413 F.3d 1024 (9th Cir. 2005) (substantive injunction for procedural default, burden of proving absence of harm to wildlife shifted to federal defendants); *Save Our Sonoran v. Flowers*, 408 F.3d 1113 (9th Cir. 2005) (residential development preliminarily enjoined for likely procedural defaults); *Earth Island Inst. v. U.S. Forest Serv.*, 351 F.3d 1291, 1308 (9th Cir. 2003).

A. The Ninth Circuit's Alternative Tests For A Preliminary Injunction Contravene Controlling Equitable Principles And Precedents

The Court has consistently required a plaintiff to satisfy four prerequisites before a *permanent* injunction can issue.

> According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief. A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law . . . are inadequate . . . ; (3) that, considering the balance of hardships between the plaintiffs and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.

eBay v. MercExchange, L.L.C., 547 U.S. 388, 391 (2006) (reversing the lower court practice of automatic injunctions for patent infringements). The "standard for a *preliminary* injunction is essentially the same," except that the plaintiff must show a "likelihood of success on the merits" in addition to showing "irreparable injury" and that the "public interest" supports a preliminary injunction. *Amoco Prod.*, 480 U.S. at 542, 546 n.12 (emphasis added); *see Doran v. Salem Inn*, 422 U.S. 922, 931 (1975).

A stay pending appeal is a subset of the universe of preliminary injunctions. There, this Court has employed the same four-part test.

> [T]he factors regulating the issuance of a stay are generally the same: (1) whether the stay

> applicant has made a strong showing that he is likely to succeed on the merits; (2) whether the applicant will be irreparably injured absent a stay; (3) whether issuance of the stay will substantially injure the other parties interested in the proceeding; and (4) where the public interest lies.

Hilton v. Braunskill, 481 U.S. 770, 777 (1987).

Yet, in the Ninth Circuit, a preliminary injunction can be granted under alternative tests that eliminate some of the four prerequisites to an extraordinary injunction.[3] As the Ninth Circuit stated here:

> Alternatively, a court may grant the injunction if the plaintiff demonstrates either a combination of probable success on the merits and the possibility of irreparable injury or that serious questions are raised and the balance of hardships tips sharply in his favor.

App. 36a-37a.

Under this statement, the first alternative allows a preliminary injunction to be granted without considering the public interest or balancing hardships to the parties, and only requires a "possibility" of irreparable injury. (The district court apparently applied this alternative test, *see* App.

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[3] The difference between the four-factor "Traditional Test (Most Circuits)" and the "Alternative Test (Ninth Circuit)" is described in the literature. Brosnahan, *Obtaining A Preliminary Injunction And Temporary Restraining Order*, ALI-ABA Course of Study (2007), available as Westlaw SN009 ALI-ABA 1345, 1348-50.

163.) The second alternative does not require a likelihood of success on the merits, and allows an injunction to issue without irreparable injury and without considering the public interest. These alternative tests clearly offend this Court's equity jurisprudence.

Moreover, even where those tests are ostensibly not applied, quoting the alternative tests in an opinion taints the process. It creates the false impression in many judges' minds that there is a quite-low threshold for a preliminary injunction. The Court should correct that misimpression in its opinion.

B. Longstanding Equitable Principles Require More Than A "Mere Possibility" Of Irreparable Injury

In the Ninth Circuit, a "possibility" or "mere possibility" of irreparable injury suffices to qualify for a preliminary injunction. App. 74a-77a, 172a; *see, e.g.*, *Earth Island Inst.*, 442 F.3d at 1159. A "mere possibility" standard is inconsistent with this Court's precedents and equity practice.

The "basis for injunctive relief in the federal courts has always been irreparable injury and the inadequacy of legal remedies." *Romero-Barcelo*, 456 U.S. at 312. This Court has appropriately required a sufficient likelihood of irreparable injury to qualify for extraordinary initial equitable relief. A "preliminary injunction requires the plaintiff to show that in the absence of its issuance he will suffer irreparable injury." *Doran*, 422 U.S. at 931. The irreparable injury standard is "essentially the same" for preliminary and permanent injunctions, and plaintiff must show that environmental injury is "of

long duration" and "is sufficiently likely" before the injury becomes "irreparable." *Amoco Prod.*, 480 U.S. at 545, 546 n.12. Under the comparable standard for a permanent injunction, the "plaintiff must demonstrate . . . that it has suffered an irreparable injury." *eBay*, 547 U.S. at 391; *see Hilton v. Braunskill*, 481 U.S. at 777 (the equivalent test for a stay is "whether the applicant will be irreparably injured absent a stay"). This Court stated a "likelihood of irreparable injury" standard in *Ashcroft v. American Civil Liberties Union*, 542 U.S. 656, 666 (2004).

"It frequently is observed that a preliminary injunction is an extraordinary and drastic remedy, one that should not be granted unless the movant, *by a clear showing*, carries the burden of persuasion." *Mazurek v. Armstrong*, 520 U.S. 968, 972 (1997) (quoting 11A WRIGHT, MILLER & KANE, FEDERAL PRACTICE AND PROCEDURE § 2948 (2d ed. 1995) (emphasis added in opinion)). As part of that "clear showing," a plaintiff must demonstrate at least a "likelihood of success on the merits." *Amoco Prod.*, 480 U.S. at 546 n.12. Similarly, in the typical case, a preliminary injunction should not issue unless plaintiff shows that irreparable injury is at least "likely." Reflecting the common equity practice, most circuit courts also require more than a "mere possibility" of irreparable injury.[4] As a noted treatise summarizes, the

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[4] *See Chaplaincy of Full Gospel Churches v. England*, 454 F.3d 290, 297-98 (D.C. Cir. 2006); *Schrier v. Univ. of Colo.*, 427 F.3d 1253, 1267-68 (10th Cir. 2005); *Siegel v. LePore*, 234 F.3d 1163, 1176 and n.9 (11th Cir. 2000) (en banc); *Adams v. Freedom Forge Corp.*, 204 F.3d 475, 484-85 (3d Cir. 2000); (continued...)

> single most important prerequisite for the issuance of a preliminary injunction is a demonstration that it if is not granted the applicant is *likely* to suffer irreparable harm. . . . There must be a *likelihood* that irreparable harm will occur.

11A WRIGHT, MILLER & KANE, FEDERAL PRACTICE AND PROCEDURE § 2948.1 (2d ed. 1995).

A "mere possibility" of irreparable injury standard sets the bar too low. Such a standard will often be met and is tantamount to no standard at all. *See* Pet. Br. at 19, 39, 45. "Risk is a pervasive element of modern life; to say more would belabor the obvious." *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 775 (1983). Almost any Department of Defense field activity or any land-use activity conducted by others arguably creates a risk or possibility of injury to some part of the environmental *status quo*. As former Chief Justice Rehnquist concluded in his role as Circuit Justice, some "added risk does not rise to immediate irreparable harm." *Beltran v. Smith*, 458 U.S. 1303, 1305 (1982).

The Ninth Circuit found that its "mere possibility of irreparable injury" test was satisfied

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Cooper v. Salazar, 196 F.3d 809, 913, 816 (7th Cir. 1999); *Sierra Club v. City of San Antonio*, 112 F.3d 789, 793 (5th Cir. 1997); *Davis v. Francis Howell Sch. Dist.*, 104 F.3d 204, 206 (8th Cir. 1997); *Direx Israel, Ltd. v. Breakthrough Med. Corp.*, 952 F.2d 802, 812 (4th Cir 1991); *Lakedreams v. Taylor*, 932 F.2d 1103, 1107 (5th Cir. 1991); *Town of Huntington v. Marsh*, 884 F.2d 648, 652-53 (2d Cir. 1989); *State of New York v. Nuclear Regulatory Comm'n*, 550 F.2d 745, 755 (2d Cir. 1977).

due to sonar's *potential* to injure individual marine mammals. App. 74a-77a. The "possibility" test seemed to be crucial. The "record contains no evidence that marine mammals have been harmed by the use of MFA sonar in the Southern California Operating Area." App. 76a.

Scientists believe "sonar *may* cause injury" to some marine mammals in certain circumstances. App. 76a (emphasis added). The "injuries" often could be minor. Most of the hypothesized injuries from sonar to marine mammals consist of "Level B" temporary hearing problems and other non-permanent injuries. App. 17a-20a, 63a-65a, 75a-76a. The Navy's agreement to additional mitigation measures reduces the potential for truly irreparable injuries. *See generally* Pet. Br. at 7-11, 15, 39-45.

Amici encourage the Court to provide three responses. First, the Court should find a "mere possibility" of irreparable injury is insufficient for an extraordinary preliminary injunction.

Second, the Court should clarify that competing claims of irreparable injury must be balanced. Where "plaintiff and defendant present competing claims of injury," courts should reconcile and balance. *Romero-Barcelo*, 456 U.S. at 312; *see Purcell v. Gonzalez*, 549 U.S. 1, 7 (2006).[5] This

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[5] For example, in forest settings, courts should "take account of the 'short- and long-term effects' of both action and inaction." *Wildwest Inst. v. Bull*, 472 F.3d 587, 592 (9th Cir. 2006); *see The Lands Council v. McNair*, __ F.3d __, 2008 WL 2640001 at *21 (9th Cir. 2008) (en banc). That is, passive management of forests increases the risks of stand-replacing wildfires and the irreparable injury such wildfires present for

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might occur by either: (1) restylizing the irreparable injury factor in terms of the balance of the likelihood of, and severity of, irreparable injuries from the grant or denial of a preliminary injunction to both plaintiff and defendant; or (2) emphasizing that a court must consider, in assessing the public interest and the balance of hardships to the parties, the irreparable injuries that may occur if a preliminary injunction were granted. Either of these mechanisms would ensure that the entire equation pertinent to the equities is considered, and that irreparable injuries to defendants' interests are not downplayed.

Third, with respect to alleged injuries to wildlife, the Court should find that irreparable injury to wildlife must be demonstrated at the population or species level. The "mere possibility" of injury to a few individuals should not be sufficient. We explore this point below.

C. Irreparable Injury To Wildlife Should Consist Of Species-Level Harm

The Ninth Circuit doubted "that NRDC was required to demonstrate the possibility of irreparable

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human and animal communities. *See id.* As the U.S. Fish and Wildlife Service has stated:

> [F]uels-reduction activities in the Sierras...will have a long-term benefit to California spotted owls by reducing the risk of catastrophic wildfire. As stated above, a primary threat to spotted owls is loss of habitat and subsequent population losses of spotted owls due to stand-replacing wildfire in unnaturally dense forest stands.

71 Fed. Reg. 29901, 29907 (May 24, 2006).

injury at the species or stock-level." App. 77a. The Court should find that, outside certain Endangered Species Act ("ESA") situations,[6] irreparable injury to wildlife – and to plaintiffs' ability to view wildlife – exists only if the action harms the species at a population level. *See* Pet. Br. at 43-45.

1. Logically, this is the correct result because the loss of a few individuals from a healthy population is not irreparable from the standpoint of population biology. If an activity poses risks to just a few members of a wildlife species, but a reproducing population is retained over time, truly irreparable injury is avoided. If a sufficient population is maintained through time, the species continues to reproduce and thrive. Moreover, if a sufficient wildlife population remains for viewing by Respondents' members, they may well lack standing and at least do not suffer irreparable harm to their interests.[7]

The principle that wildlife species do not suffer irreparable injury if a few members of the species

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[6] ESA § 9 makes it unlawful to "take" a member of an "endangered" wildlife species, and such a "take" can be enjoined in an ESA § 11 citizen suit. 16 U.S.C. 1538(a)(1)(B) and 1540(g); *see Babbitt v. Sweet Home Chapt. of Commtys. for a Great Oregon*, 515 U.S. 687 (1995). The panel did not address any ESA claim that sonar causes the unlawful "take" of a member of an endangered wildlife species.

[7] Individual wildlife and wildlife species lack standing. *E.g., Sierra Club v. Morton*, 405 U.S. 727 (1972); *Cetacean Community v. Bush*, 386 F.3d 1169 (9th Cir. 2004) (dismissing a suit challenging the Navy's use of sonar). To have standing, a plaintiff must show some personal injury to an interest in viewing wildlife. *See id.*; *Friends of the Earth v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181-83 (2000).

are taken underlies most fishing and hunting programs. For example, the Magnuson-Stevens Fishing Conservation and Management Act promotes optimum use and maximum sustainable (human) use of fish species. *See* 16 U.S.C. 1802(33), 1853(a).

2. Mankind's economic and national defense activities often necessarily alter the environment in some way. Those activities thereby create risks of injury to a few members of *some* species,[8] be it insects or mammals. If this Court were to sanction a test of "mere possibility of irreparable injury to an individual animal," the practical effects include more preliminary injunctions, decreased economic activity, delays in public projects, and impaired national defense.

The Court should avoid those results. The temporary injury to, or risk of loss of, a few members of a wildlife species is not sufficient harm to warrant an extraordinary injunction. *See Romero-Barcelo*, 456 U.S. at 311-12.

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[8] For example, wildlife issues frequently arise in forest management. Because each species prefers a particular habitat, choosing *any* form of active or passive forest management inevitably increases the population size of some species and decreases the population count for other species. *Sierra Club v. Espy*, 38 F.3d 792, 800-02 (5th Cir. 1994); *see Seattle Audubon Soc'y v. Moseley*, 80 F.3d 1401, 1404 (9th Cir. 1996). Nonetheless, the Ninth Circuit sometimes finds the risks that active forest management poses to some members of a wildlife species warrant a preliminary injunction, despite benefits to other species and to other public interests. *E.g.*, *Earth Island*, 442 F.3d at 1170-77.

3. The Ninth Circuit's approach – where injuries to a few members of a robust species constitute irreparable injury – effectively presumes that any wildlife injury is irreparable. This reinstates a test that was rejected in *Amoco Prod.*, 480 U.S. at 544-46. There, this Court reversed the Ninth Circuit's presumption that environmental injury is irreparable. The Court found such a "presumption is contrary to traditional equitable prerequisites." 480 U.S. at 545.

4. Finally, it is pertinent that the majority of lower courts have found, outside the context of ESA "take" of wildlife, there is no irreparable injury when an action poses risks to a few individuals, but not to the species.

Most significantly, the First Circuit denied a preliminary injunction against Navy training exercises (bombing Vieques Island) for an alleged "procedural violation of the ESA" because plaintiffs had not made a "concrete showing of probable deaths [of ESA-listed species] during the interim period and of how these deaths may impact the species." *Water Keeper Alliance v. U.S. Dep't of Defense*, 271 F.3d 21, 33-34 (1st Cir. 2001).[9] Similarly here, the alleged

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[9] Other lower court decisions finding that irreparable injury should be determined at the wildlife population level, not the individual level, include the following. *Fund for Animals v. Frizzell*, 530 F.2d 982, 986-87 (D.C. Cir. 1975) (refusing to accept the "extreme contention that the loss of only one bird is sufficient injury to warrant a preliminary injunction; rather, a proponent of such an injunction must raise a substantial possibility that the harvest of excessive numbers of these waterfowl will irretrievably damage the species"); *Sierra Nevada Forest Prot. Campaign v. Rey*, No. 05-cv-0205 MCE GGH, 2007 WL 3034931 at *9 (E.D. Cal. Oct. 16, 2007)

(continued...)

procedural violation of the National Environmental Policy Act ("NEPA") does not warrant a preliminary injunction against other military preparedness exercises in the absence of proof of injury at the population level for non-ESA wildlife. *See also* Section III, below.

At the cert stage, Respondents cited *Greater Yellowstone Coal. v. Flowers*, 321 F.3d 1250, 1257-58 (10th Cir. 2003), on irreparable injury to wildlife. But under that opinion, courts must consider the purposes of the particular statute in determining whether irreparable injury applies at the individual or population level. The Ninth Circuit found a likely NEPA violation. NEPA focuses on "adverse effects on a species, not the impact on individuals." *Envtl. Prot. Info. Ctr. v. U.S. Forest Serv.*, 451 F.3d 1005, 1010 (9th Cir. 2006).

D. The Analyses Of The Public Interest And Of Hardships To The Parties Were Skewed Too Heavily In Favor Of Preservation

The Ninth Circuit did engage in some superficial balancing of competing public interests. But the bottom line is that environmental preservation interests dominated. The panel found

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("irreparable harm in this context depends on a demonstrable impact to the species as a whole"), *rev'd on other grounds sub nom. Sierra Forest Legacy v. Rey*, 526 F.3d 1228 (9th Cir. 2008), *petitions for rehearing pending*; *Natural Resources Defense Council v. Kempthorne*, No. 05-cv-1207 OWW TAG, 2007 WL 1989015 at *13 (E.D. Cal. July 3, 2007); *Alabama v. U.S. Army Corps of Eng'rs*, 441 F. Supp. 2d 1123, 1135-36 (N.D. Ala. 2006).

the risk of injury to individual marine mammals from sonar to be controlling under the "mere possibility" of irreparable injury test, under the balance of harms among the parties test, *and* under the public interest test. *See* App. 75a-77a, 87a-89a; Pet. Br. at 42-43, 45-47 (describing the "Ninth Circuit's distortion of equitable principles" under its "asymmetrical approach"), 49-54. This repeats a pattern in which the Ninth Circuit often grants preliminary injunctions, employing analyses heavily skewed towards short-term environmental preservation. *See* cases cited in note 2.

1. The Ninth Circuit's pattern contravenes this Court's guidance that all public interests must be fairly considered. Congress gives meaning to the public interest in the statutes it enacts. Accordingly, courts must consider the public interest as defined in statutory law. *Amoco Prod.*, 480 U.S. at 547 (the Ninth Circuit erred in not considering the public interest in oil and gas development reflected in the Outer Continental Shelf Lands Act).

Here, while the Marine Mammal Protection Act ("MMPA") ordinarily favors the interests of marine mammals, the MMPA allows the Secretary of Defense to exempt activities "necessary for national defense." 16 U.S.C. 1371(f). The exemption was invoked here. Congress and the Executive Branch have found that, in this case, national defense interests trump the interests in avoiding small potential impacts to some marine mammals. The Ninth Circuit erred in not honoring the priority of public interests established by statute. *United States v. Oakland Cannabis Buyers' Coop.*, 532 U.S.

483, 497 (2001); *Meghrig v. KFC Western, Inc.*, 516 U.S. 479, 482-83, 487-88 (1996); Pet. Br. at 34-37.[10]

2. We agree with the Solicitor General's judgment that "absent from the Ninth Circuit's analysis is any attempt to weigh the *magnitude* of potential harm to one party against the harm to another" and to the "public interest." Pet. Br. at 47. The Ninth Circuit's opinions are inconsistent with this hallmark of equity practice.

For example, even if the Navy's training exercises pose *some* irreparable injury and hardship to Respondents' environmental interests, that should not warrant a preliminary injunction. This Court found that, in a wartime situation concerning irreparable injury from price controls, even where the plaintiff may suffer "irreparable injury," weightier "public interest" considerations allow a court to "withhold [preliminary injunction] relief." *Yakus v. United States*, 321 U.S. 414, 440 (1944) (sustaining the Emergency Price Control Act). Thus, at least three national defense-related decisions –

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[10] This is not the first time the Ninth Circuit has found that it need not respect a statutory balance on remedies. The Federal Insecticide, Fungicide, and Rodenticide Act provides detailed standards and procedures for assessing when the use of a pesticide to produce the Nation's food and fiber is outweighed by an imminent hazard to an ESA-listed species, thereby allowing a use of the pesticide to be "suspended" (preliminarily enjoined) pending a proceeding. 7 U.S.C. 136(*l*), 136d(c). Yet, the Ninth Circuit has found that courts can issue substantive injunctions that are *de facto* suspensions of approved pesticide uses for a procedural violation of the ESA where the FIFRA standards for a suspension are not met. *Washington Toxics Coal. v. EPA*, 413 F.3d 1024, 1032-35 (9th Cir. 2005).

Yakus, *Romero-Barcelo*, and *Water Keeper* – strongly suggest the Ninth Circuit erred in its balancing of pertinent public interests.

More generally, courts "should pay particular regard for the public consequences in employing the extraordinary remedy of injunction" against a federal agency. *Romero-Barcelo*, 456 U.S. at 312-13. The decisions made by Executive Branch officials charged with implementing and reconciling statutes (e.g., the Departments of Defense and Commerce in this case; and agencies such as the Environmental Protection Agency and the Departments of Agriculture and the Interior for industries in which *Amici*'s members do business) should not be preliminarily enjoined by the Judicial Branch absent some truly extraordinary, countervailing public interest.[11]

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[11] One recurring example concerns forestry. After a forest fire, the economic value of scorched trees deteriorates as logs rot and decay. The Forest Service has statutory authority from Congress to use revenues from the salvage sale of timber to fund money-losing, but environmentally desirable, reforestation. In this time-sensitive situation, the grant of a preliminary injunction can mean the salvage harvesting and reforestation will not occur, because they become uneconomic at later points in time. *See Earth Island*, 442 F.3d at 1154-55, 1177; *Forest Serv. Employees for Envtl. Ethics v. U.S. Forest Serv.*, 408 F. Supp. 2d 916, 917-18 (N.D. Cal. 2006). Yet, because the Ninth Circuit's approach often is heavily skewed towards short-term preservation, the economic and environmental harms did not dissuade Ninth Circuit panels from granting a preliminary injunctions in *Earth Island*, 442 F.3d 1147, and *Earth Island*, 351 F.3d 1291. There is some hope that the Ninth Circuit will engage in a more-neutral balancing of public interests in light of *The Lands Council v.*

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II. There Is No Likely NEPA Violation

NEPA compliance is subject to a "rule of reason." *Dep't of Transp. v. Public Citizen*, 541 U.S. 752, 767 (2004). The Navy had prepared an extensive environmental assessment on the training program. The Navy is preparing the environmental impact statement ("EIS") demanded by the lower courts. The agency charged with implementing NEPA, the Council on Environmental Quality ("CEQ"), determined that the military training missions could continue in the interim. CEQ concluded that an "emergency" exists within the meaning of CEQ's NEPA rules (40 C.F.R. 1506.11), and approved the alternative NEPA procedure of allowing military preparedness exercises to continue while an EIS is being prepared. *See* Pet. Br. at 8, 15, 22-23.

The courts below committed several errors in refusing to defer to this interpretation of NEPA rules. First, the Ninth Circuit panel analyzed the issue from the perspective of whether the district

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McNair, __ F.3d __, 2008 WL 2640001 at *20-22 (9th Cir. 2008) (en banc).

Federal agriculture programs provide another example. A district court in the Ninth Circuit recently issued a temporary restraining order followed by a permanent injunction against an Agriculture Department initiative designed to alleviate the strain caused by soaring prices for many field crops. Invoking the Ninth Circuit's preliminary injunction standard, the court held that the "possibility" of irreparable harm to plaintiffs' putative interests in wildlife was sufficient to enjoin that important program. *Nat'l Wildlife Fed'n v. Schafer*, No. CV08-1004-JCC (W.D. Wash. July 18 & 24, 2008).

court abused its discretion on its preferred reading of "emergency," rather than examining whether CEQ's construction of its own rule was "controlling" because it was not "plainly erroneous." *Auer v. Robbins*, 519 U.S. 452, 461 (1997); *see McCreary County, Kentucky v. American Civil Liberties Union of Kentucky*, 545 U.S. 844, 867 (2005) (an appellate court reviews *de novo* a district court's legal conclusions); App. 44a-50a and n.41; Pet. Br. at 22-24, 27-29.

Second, CEQ's construction is not plainly erroneous. "Emergency" has a range of meanings. One meaning is a current situation that calls for expeditious action, regardless of whether the situation was arguably foreseeable with the benefit of hindsight. CEQ's interpretation is within that range of reasonable meanings. Other courts have deferred to comparable "emergency" determinations by CEQ.[12] More generally, to ensure that needed aid and other emergency relief are not frustrated by courts, the Court should grant CEQ a wide berth in determining emergencies. *See* Pet. Br. at 24-26, 29-33.

Third, the Ninth Circuit's imposition of its (and the district court's) reading of NEPA over CEQ's reading repeats an error found in *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 354-56 (1989). There, this Court overturned the Ninth

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[12] *See Nat'l Audubon Soc'y v. Hester*, 801 F.2d 405, 408 (D.C. Cir. 1986) (foreseeable, but emergency, need to remove condors from the wild); *Valley Citizens for a Safe Env't v. Vest*, 1991 WL 330963 (D. Mass. 1991) (emergency need for military supplies); *Crosby v. Young*, 512 F. Supp. 1363, 1384-87 (E.D. Mich. 1981) (emergency need for financing of economic development).

Circuit's imposition of its preferred reading that NEPA itself requires a "worst case" analysis. This Court reversed the lower court's refusal to defer to a new CEQ rule.

Thus, CEQ permissibly found that NEPA is not violated if the military preparedness exercises continue while an EIS is prepared. Accordingly, there is no NEPA violation potentially warranting an extraordinary preliminary injunction.

III. NEPA's Purpose Does Not Mandate A Substantive Injunction For A Curable Procedural Default

The Ninth Circuit granted an intrusive preliminary injunction limiting ongoing Navy training exercises, based on the panel's finding of a likely procedural default that is being cured through the Navy's preparation of an EIS. Such a substantive injunction for a procedural violation was not warranted. *See* Pet. Br. at 37, 49.

1. *Romero-Barcelo* directs courts to look at whether the "purpose" of the statute requires an injunction. 456 U.S. at 314-16. There, this Court reversed a substantive injunction against the Navy's bombing exercises without a Clean Water Act permit. The Court found that the Navy's commitment to obtain a Clean Water Act permit was a sufficient (procedural) remedy to achieve statutory compliance. 456 U.S. at 312-18.

The fact pattern in *Romero-Barcelo* is, of course, quite similar to the naval training program and the likely procedural violation of NEPA found here. The public interest in NEPA compliance is being achieved through an extensive environmental assessment and the Navy's completion of an EIS. In

the interim, NEPA's purposes do not demand a substantive injunction against an ongoing agency action.

This is especially true because NEPA is procedural. NEPA does not elevate preservationist concerns over other public interest elements. *Robertson v. Methow Valley*, 490 U.S. at 349-53 (reversing a Ninth Circuit decision that read NEPA in a substantive, preservationist manner). *See also Amoco Prod.*, 480 U.S. at 544-46 (the "purpose of ANILCA § 810['s]. . . procedure" did not require an injunction).

2. There is a tension in lower court case law as to whether injunctions should presumptively issue for a NEPA violation. In the Ninth Circuit, some decisions find that the "importance of preserving the environment and of enforcing the law intended to preserve it," NEPA, is controlling. *Sierra Forest Legacy v. Rey*, 526 F.3d at 1234; *see, e.g., Earth Island*, 442 F.3d at 1177 ("the preservation of our environment, as required by NEPA . . . , is clearly in the public interest"). The panel in the instant case seems to have followed this logic *sub silentio*.

But that logic clearly misreads this Court's decisions in *Robertson v. Methow Valley*, *Amoco Prod.*, *Romero-Barcelo*, and *eBay*. This "Court has consistently rejected invitations to replace traditional equitable considerations with a rule that an injunction automatically follows" for a violation of law. *eBay*, 547 U.S. at 392-93.

The proper result is, as the Ninth Circuit has stated in competing line of cases, a "NEPA violation is subject to traditional standards in equity for

injunctive relief." *Northern Cheyenne Tribe v. Norton*, 503 F.3d 836, 842 (9th Cir. 2007).

3. More generally, this Court normally prefers less-drastic relief that does not prevent the agency from operating. *E.g.*, *United States v. James Daniel Good Real Property*, 510 U.S. 43, 63-64 (1993); *Brock v. Pierce County*, 476 U.S. 253, 260 (1986); *Hartford-Empire Co. v. United States*, 323 U.S. 386, 410 (1945) (a court should not enjoin the "whole conduct of the defendants' business"); *Hecht Co. v. Bowles*, 321 U.S. 321, 325-26, 329 (1944) (injunctions should not be issued to punish for past violations of law, where there is a good-faith effort to avoid violations in the future). Because the alleged NEPA deficiency is being cured in a timely fashion, the procedural "purpose" of NEPA does not warrant a substantive preliminary injunction against the continuation of military preparedness exercises.

CONCLUSION

The preliminary injunction sanctioned by the Ninth Circuit should be vacated.

Respectfully submitted,

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AMICUS CURIAE BRIEF

No. 07-1239

In The

Supreme Court of the United States

DONALD C. WINTER,
Secretary of the Navy, *et al.*,
Petitioners,
v.
NATURAL RESOURCES
DEFENSE COUNCIL, INC., *et al.*,
Respondents.

On Writ Of Certiorari To The United States Court Of Appeals For The Ninth Circuit

BRIEF FOR *AMICI CURIAE* DEFENDERS OF WILDLIFE, HUMANE SOCIETY OF THE UNITED STATES, CENTER FOR BIOLOGICAL DIVERSITY, OCEANA, INC., SIERRA CLUB, THE WILDERNESS SOCIETY, ANIMAL LEGAL DEFENSE FUND, AND GREENPEACE, INC. IN SUPPORT OF RESPONDENTS

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INTERESTS OF *AMICI CURIAE*[1]

Amici are non-profit conservation and animal protection organizations with longstanding interests in the effective implementation of the National Environmental Policy Act of 1969 ("NEPA"), 42 U.S.C. §§ 4321-4370(f), particularly with regard to ensuring that federal agencies adequately consider the actual and potential effects of their actions on wildlife.

Defenders of Wildlife ("Defenders") is a non-profit organization with over one million members and supporters across the country. Defenders is dedicated to the protection and restoration of all native wild animals and plants in their natural communities.

The Humane Society of the United States ("HSUS") is a non-profit organization dedicated to the protection of animals. HSUS has over 10.5 million members and constituents nationwide, including nearly 1.25 million members and constituents in California, many of whom observe, study, and photograph marine mammals along the California coast.

The Center for Biological Diversity Plaintiff ("CBD") is a non-profit membership organization with its headquarters in Tucson, Arizona. Striving to

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[1] No counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No persons other than *amici curiae*, their members, or their counsel made a monetary contribution to its preparation or submission. The parties have consented to the filing of this brief.

secure a future for animals and plants hovering on the brink of extinction and for the wilderness they need to survive, on behalf of its more than 180,000 members and supporters, CBD is actively involved in species and habitat protection advocacy throughout the United States.

Oceana, Inc., is a non-profit international advocacy organization dedicated to protecting and restoring the world's oceans through policy, advocacy, science, law, and education. Oceana has over 37,000 members around the world. Among other objectives, Oceana campaigns to protect marine habitat from destructive fishing practices; to conserve and restore the populations of at-risk marine species; and to protect ocean ecosystems from the damaging effects of global climate change.

The Sierra Club was founded in 1892 and is the nation's oldest grassroots environmental organization, with more than 725,000 members nationwide. The Sierra Club's organizational mission is to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments.

The Wilderness Society is a nonprofit organization with over 300,000 members and supporters across the country. The Wilderness Society's mission is to protect wilderness and inspire Americans to care for our wild places.

The Animal Legal Defense Fund ("ALDF") is a national non-profit organization with over thirty years of experience litigating cases and analyzing legal issues concerning animals. On behalf of its more than 110,000 members throughout the country, ALDF has litigated numerous cases addressing endangered species, marine mammals, and other wildlife issues.

Greenpeace, Inc. is a non-profit environmental organization incorporated in California. The mission of Greenpeace, which currently has approximately 250,000 members in the United States, is to raise public awareness of environmental problems, including such problems that adversely affect marine mammals.

All *amici* seek to protect and restore wildlife through participation in administrative proceedings before government agencies, litigation in federal court, and public education activities. In carrying out these activities, *amici* and their members participate extensively in NEPA processes pertaining to federal agency actions that may significantly affect wildlife, including by commenting on Environmental Impact Statements ("EISs") and Environmental Assessments ("EAs") that address wildlife effects of federal actions. In addition, when the NEPA process is not implemented sufficiently to consider an adequate range of alternatives or to otherwise take a hard look at environmental impacts, *amici* rely on litigation to ensure that NEPA's purposes are fulfilled. The position advanced by the government here would, if adopted by the Court, greatly impede the ability of

amici to rely on NEPA to ensure a meaningful consideration by federal agencies of the impacts of their actions on wildlife.

SUMMARY OF ARGUMENT

1. The government's contention that respondents failed to establish injury sufficient for preliminary injunctive relief not only improperly discounts the lower courts' factual findings of "almost certain" irreparable harm to many thousands of marine mammals, App. 87a, but it also confuses the nature of irreparable injury in a NEPA case. Because NEPA's fundamental function is to ensure that environmental concerns are "integrated into the very process of agency decisionmaking," *Andrus v. Sierra Club*, 442 U.S. 347, 350 (1979), when, as here, an agency fails to produce an EIS addressing potentially significant effects *before* the agency action is implemented, the very premise underlying NEPA is that "real environmental harm will occur through inadequate foresight and deliberation" by agency decisionmakers. *Sierra Club v. Marsh*, 872 F.2d 497, 502, 504 (1st Cir. 1989).

In this case, that premise is fully borne out by respondents' detailed expert declarations and other record evidence pinpointing important impacts and alternatives never addressed by the Navy, and predicting consequences far more severe than those which the government acknowledges. This is clearly

sufficient to satisfy respondents' threshold burden of establishing irreparable injury, especially where the *denial* of preliminary injunctive relief would be tantamount to depriving respondents of *any* effective judicial remedy for the Navy's failure to prepare an EIS before embarking on an environmentally harmful course of action.

2. The government's contention that respondents could establish irreparable injury only by proving "long-lasting harm to a species as a whole," Pet. Br. at 19-20, is groundless. Because respondents and their members make routine use of the marine resources off the coast of southern California to observe, photograph, and otherwise enjoy marine life in the specific geographical areas being impacted by the Navy's operations, respondents' demonstration of a significant threat to *their* concrete interests by virtue of the Navy's failure to prepare an EIS should be sufficient to establish irreparable injury irrespective of any potential species-wide effect from the training exercises. *Cf. Lujan v. Defenders of Wildlife*, 504 U.S. 555, 572 (1992) (plaintiffs may "seek[] [] to enforce a procedural requirement the disregard of which could impair a separate concrete interest of theirs (e.g. . . . the procedural requirement for an [EIS] before a federal facility is constructed next door to them)").

3. Contrary to the government's contention, the Navy's preparation of an EA did not eliminate either the legal need for, or the practical value of, an EIS. The courts have rejected identical arguments because

the central legal function of an EA is to determine *whether* an EIS is even required and, moreover, EISs are subject to far more stringent requirements which were not followed here. In any case, the lower courts made specific findings that the EA did not even *address* important impacts and alternatives, let alone "fulfill the purposes" of an EIS. Pet. Br. at 49.

ARGUMENT

I. INTRODUCTION

Amici do not address in this brief the first question on which the Court has granted review; nor do *amici* discuss whether the balance of equities in this particular case supported the issuance of a preliminary injunction. Both of those issues are thoroughly addressed in the Brief of Respondents.

Rather, the focus of this brief is on several legal arguments advanced by the government concerning the test that should be applied in order for preliminary injunctive relief to be granted in NEPA cases, particularly in cases involving potentially significant effects on wildlife. As a practical matter, the government's position would, if adopted, make it virtually impossible for district courts to issue preliminary injunctive relief for even blatant violations of NEPA and, indeed, it would lead to the counterintuitive result that the lower courts must, as a general rule, allow an environmentally destructive action to proceed regardless of whether the action should have

been preceded by preparation of an EIS. To appreciate why this is so, it is necessary to first briefly summarize the government's approach to the preliminary injunction standard in this case.

The government argues that there is "considerable scientific uncertainty" surrounding the potential effect of the Navy's training exercises on marine mammals that inhabit the biologically rich waters off the coast of southern California. Brief for the Petitioners ("Pet. Br.") at 19; *id.* at 39. Importantly, however, that "uncertainty" does not concern *whether* marine mammals will be adversely affected by the training exercises, because even the Navy's own EA concluded that *tens of thousands* of marine mammals will suffer some form of impairment of their behavior or physical well-being. *Id.* at 9-10; *see also* Pet. App. ("App.") at 75a ("The EA estimates that the use of MFA sonar in the SOCAL exercises will result in 564 instances of physical injury including permanent hearing loss [ ] and nearly 170,000 behavioral disturbances").

In fact, while the government focuses much of its brief on whether the "mere possibility" of environmental injury is sufficient to support a preliminary injunction, Pet. Br. at 39, the lower courts *actually* made factual findings – based on detailed declarations submitted by leading marine mammal experts, and other extensive record evidence – that "irreparable harm to marine mammals *will almost certainly result* should the Navy be permitted to conduct its remaining exercises." App. 87a (emphasis added);

that "NRDC had established 'to a *near certainty*' that use of MFA sonar in the SOCAL exercises will cause irreparable harm to the environment," App. 75a (emphasis added); and that there is "overwhelming" evidence that mid-frequency sonar of the type employed by the Navy here is associated with "mass stranding" events and other serious injuries to various species of marine mammals. App. 14a.[1]

In short, the record leaves no doubt that the Navy's action *will* indeed cause substantial environmental harm – which the lower courts held should have been examined further in an EIS – and the only "uncertainty" is how wide-ranging that harm will be, with regard to both the individual animals affected and the marine mammal populations residing off the coast of California. However, the government does not argue only that the *balance of harms* in this particular case was sufficient to deny preliminary injunctive relief. Rather, it advances the far more extreme proposition that, even assuming the lower courts

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[1] *See also* J.A. 470-71 (declaration by a contracting scientist for the National Marine Fisheries Service ("NMFS") that the "Navy's 14 major exercises individually and collectively present a significant risk to the marine mammals off California"); *id.* at 475 ("Even apart from strandings and other acute responses, the cumulative effects of 14 major exercises ... may be highly significant for some California populations."); *id.* at 582 (declaration by cetacean researcher and member of the Scientific Committee of the International Whaling Commission that "[b]ased on our research, I believe that there is significant potential for population-level effects, particularly if the displacement coincides with seasonal breeding or foraging").

were correct that there *was* a likely NEPA violation because the Navy should have prepared an EIS to address potentially significant effects on the marine environment, *and* that thousands of marine mammals in the vicinity of the training exercises are being adversely affected by them, that would still be inadequate to support a preliminary injunction *irrespective* of any equitable factors militating against such relief in this particular case.

Indeed, the Navy goes so far as to argue that the presence of "scientific uncertainty" as to the extent of environmental harm that an action will cause is sufficient to preclude a finding of *any* irreparable injury, even before an agency has undertaken a legally mandated EIS for the precise purpose of evaluating such impacts and alternatives that may avoid or mitigate environmental threats. Pet. Br. at 19, 39. Even further, in the case of wildlife effects in particular, the government maintains that to establish any "irreparable harm" at all the "organizational respondents would have to *show permanent or long-lasting harm to a species as a whole*. . . ." Pet. Br. at 19-20 (emphasis added).

As discussed below, however, these aspects of the government's argument – which extend far beyond that which is necessary for the Court to resolve the case at hand – are based on a misapprehension of NEPA's core purpose, as it has been articulated by this Court in many precedents, and how it should factor into a preliminary injunction analysis. Those precedents dictate the conclusion that, when there is

a likely NEPA violation – and particularly a failure to prepare an EIS – a significant risk of harm to the environment occasioned by the violation is ordinarily sufficient to constitute "irreparable injury" warranting issuance of a preliminary injunction. In addition, the government's approach is predicated on a fundamental misunderstanding of how adverse impacts to wildlife may – as in this case – threaten irreparable injury in a particular geographical area regardless of whether the action will have impacts on a wildlife "species as whole." Pet. Br. at 44. Finally, the Navy's notion that its preparation of an EA somehow rendered its failure to prepare an EIS harmless error, *see* Pet. Br. at 49, conflates the legally distinct roles these documents play in the statutory scheme, and also disregards the lower courts' factual findings that, notwithstanding its length, the Navy's EA gave short shrift to several important issues.

II. IN LIGHT OF NEPA'S OVERRIDING PURPOSE TO INJECT ENVIRONMENTAL CONSIDERATIONS INTO AGENCY DECISION MAKING, THERE IS IRREPARABLE INJURY WHEN AGENCIES FAIL TO CONSIDER SERIOUS RISKS OF ENVIRONMENTAL HARM IN AN EIS BEFORE TAKING ACTION.

A. The Court's Approach To The Irreparable Injury Issue Must Consider Whether NEPA's Purpose Can Be Met Without Injunctive Relief.

1. It is well established that, in evaluating whether to craft injunctive relief to remedy a particular statutory violation, a reviewing court must consider the extent to which such relief is appropriate in light of the "purpose and language of the statute under consideration. . . ." *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 314 (1982). Although the government pays lip service to that principle, *see* Pet. Br. at 49, its argument actually runs roughshod over the "purpose and language" of NEPA, and it also fails to come to grips with why the Court's analysis in *Weinberger* and the other precedents cited in the government's brief actually compel the conclusion that serious irreparable injury ordinarily *does* exist when an agency implements an environmentally risky action in the absence of a legally mandated EIS.

In *Weinberger*, the Court upheld the district court's discretion to determine that a particular violation of the Federal Water Pollution Control Act

("FWPCA"), 33 U.S.C. §§ 1251-1387 – which involved the Navy's discharge of ordnance into the ocean – did not need to be remedied by an immediate injunction against such discharges because the "purpose" of the FWPCA, to protect the "integrity of the Nation's waters," could be achieved through relief *other than an injunction*, namely, an order directing the Navy to apply for a permit. 456 U.S. at 315; *id.* at 314-15 ("The integrity of the Nation's waters, however, not the permit process, is the purpose of the FWPCA . . . [T]he discharge of ordnance *had not polluted the waters*, and, although the District Court declined to enjoin the discharges, *it neither ignored the statutory violation nor undercut the purpose and function of the permit system*.") (emphasis added).

Likewise, in *Amoco Prod. Co. v. Vill. of Gambell, Alaska*, the Court held that a finding of a likely violation of the Alaska National Interest Lands Conservation Act ("ANILCA"), 16 U.S.C. § 3120, did not necessitate the issuance of preliminary injunctive relief because the "underlying substantive policy the [ANILCA] process was designed to effect – preservation of subsistence resources" for Alaskan natives – could be served without enjoining the oil and gas exploration activities at issue. 480 U.S. 531, 544 (1987). While observing that generally "[e]nvironmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, *i.e.*, irreparable," and that "[i]f such injury is sufficiently likely, therefore, the balance of harms will usually favor the issuance of an injunction

to protect the environment," in that case, the district court had made the factual determination that the "exploration activities would not significantly restrict subsistence uses," and hence preliminary injunctive relief was not needed to accomplish the "underlying substantive policy" embodied in ANILCA. *Id.* at 544-45.

As these and other precedents instruct, therefore, a court's injunction analysis cannot occur in either a factual or a legal vacuum; rather, a district court has broad discretion to determine whether injunctive relief is appropriate under the particular facts of the case, but the court must also assess whether the statutory purpose can meaningfully be furthered by relief other than an injunction. Indeed, this Court has stressed that a "court sitting in equity cannot 'ignore the judgment of Congress deliberately expressed in legislation,'" and hence it is the court's role to assess whether the "selection of an injunction *over other enforcement mechanisms*" is appropriate to effectuate the scheme adopted by Congress. *United States v. Oakland Cannabis Buyers' Cooperative*, 532 U.S. 483, 497-98 (2001) (emphasis added; internal citation omitted); *cf. Weinberger*, 456 U.S. at 314 (explaining that, in *Tenn. Valley Auth. v. Hill*, 437 U.S. 153 (1978), the Court had determined that the "purpose and language of the [Endangered Species Act ("ESA")] limited the remedies available to the District Court").

B. Given NEPA's Purpose and Procedural Function, Irreparable Injury Exists When Significant Environmental Risks Are Not Addressed In A Legally Required EIS Before The Agency's Action Is Implemented.

1. When the foregoing analysis is applied to NEPA, it dictates the conclusion that plaintiffs in NEPA cases certainly satisfy the irreparable injury element of the test for injunctive relief when they establish that an agency has failed to prepare an EIS that is likely required by law, and that the statutory violation, as in this case, poses a "significant risk" of harm to the environment and to the plaintiffs' concrete interests in the affected resources. *Greater Yellowstone Coalition v. Flowers*, 321 F.3d 1250, 1261 (10th Cir. 2003). Indeed, given NEPA's unique "purpose and language," *Weinberger*, 456 U.S. at 314, in most cases it is simply impossible for the statutory scheme to be carried out in the manner intended by Congress unless the *status quo* is maintained *while* a legally mandated EIS is being prepared.

As this Court has recently reaffirmed, NEPA is "intended to reduce or eliminate environmental damage and to promote 'the understanding of the ecological systems and natural resources important to' the United States." *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 756 (2004) (quoting 42 U.S.C. § 4321). However, in contrast to substantive statutes like the FWPCA, ANILCA, and the ESA, "'NEPA itself does not mandate particular results' in order to accomplish'" its

goal of increased environmental protection. *Pub. Citizen*, 541 U.S. at 756 (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989)). Instead, the "NEPA EIS requirement" is designed to inject environmental considerations "in the agency decisionmaking process itself," and to "'help public officials *make decisions that are based on understanding of environmental consequences*, and take actions that protect, restore, and enhance the environment.'" *Id.* at 768-69 (emphasis added) (quoting 40 C.F.R. § 1500.1(c)).[1]

Because "NEPA's core focus [is] on improving agency decisionmaking," *Pub. Citizen*, 541 U.S. at 769 n.2, and specifically on ensuring that agencies take a "hard look" at potential environmental impacts and environmentally enhancing alternatives "as part of the agency's process of deciding whether to pursue a particular federal action," *Baltimore Gas and Elec. Co. v. Nat. Res. Def. Council*, 462 U.S. 87, 100 (1983), the "moment at which an agency must have a final statement ready 'is the time at which it makes a recommendation or report on a *proposal* for federal

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[1] *See also Robertson*, 490 U.S. at 349 (The EIS requirement "ensures that the agency, in reaching its decision, will have available, *and will carefully consider*, detailed information concerning significant environmental impacts") (emphasis added); 40 C.F.R. § 1502.1 ("The primary purpose of an environmental impact statement is to serve as an action-forcing device to insure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government.").

action.'" *Kleppe v. Sierra Club*, 427 U.S. 390, 406 (1976) (emphasis in original) (quoting *Aberdeen & Rockfish R. Co. v. Students Challenging Regulatory Agency Procedures*, 422 U.S. 289, 320 (1975)); *see also* 42 U.S.C. § 4332(C). This requirement is designed to "place[ ] upon an agency the obligation to consider every significant aspect of the environmental impact" at a stage when such impacts can most meaningfully influence the agency's deliberations, *i.e.*, after the agency has settled on a concrete "proposed action," but *before* the decision and its environmental effects are a *fait accompli*. *Vt. Yankee Nuclear Power Corp. v. Nat. Res. Def. Council*, 435 U.S. 519, 553 (1978).[4]

2. This Court's longstanding recognition of NEPA's fundamental "action-forcing" function of ensuring that "environmental concerns are . . . interwoven into the fabric of agency planning," *Andrus*, 442 U.S. at 351, has enormous implications for how NEPA violations ordinarily should be remedied. Contrary to the government's suggestion that a NEPA

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[4] *See also Andrus*, 442 U.S. at 351 (the CEQ regulations "require federal agencies to 'integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values'") (quoting 40 C.F.R. § 1501.2); *Flint Ridge Dev. Co. v. Scenic Rivers Ass'n of Okla.*, 426 U.S. 776, 787 (1976) ("NEPA's instruction that all federal agencies comply with the impact statement requirement and with all the other requirements of § 102 'to the fullest extent possible,' 42 U.S.C. § 4332, is neither accidental nor hyperbolic. Rather, the phrase is a deliberate command that the duty NEPA imposes upon the agencies to consider environmental factors not be shunted aside in the bureaucratic shuffle.").

violation may effectively be rectified without injunctive relief addressing the effects of the challenged action *before* they occur, *see* Pet. Br. at 37 (suggesting that "even where relief is warranted" for a NEPA violation, only "declaratory" relief may be appropriate), that approach clearly converts NEPA compliance into a make-work exercise and, indeed, "makes a mockery of the EIS process, converting it from analysis to rationalization." Leslye A. Herrmann, *Injunctions for NEPA Violations: Balancing the Equities*, 59 U. Chi. L. Rev. 1263, 1289 (1992). As this Court has stressed time and again, that is precisely what Congress did *not* intend when it imposed the EIS obligation on all federal agencies. *See Pub. Citizen*, 541 U.S. at 768-69 (rejecting the concept of NEPA compliance that can have "no effect" on agency decisionmaking because "'*NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action*'") (quoting 40 C.F.R. § 1500.1(c) (emphasis added); *see also Andrus*, 442 U.S. at 351 n.3 (an EIS must be "prepared early enough so that it can serve practically as an important contribution to the decisionmaking process and *will not be used to rationalize or justify decisions already made*.") (emphasis added).

Indeed, while noting that declaratory relief is authorized by the Administrative Procedure Act ("APA"), *see* Pet. Br. at 37, the government never explains *how* declaratory relief alone could in any meaningful way remedy an agency's failure to prepare an EIS before embarking on an action with potentially significant environmental effects. As this case illustrates, such

"relief" – *i.e.*, declaring the Navy's training exercises to be in contravention of NEPA *while the agency is implementing them* with no further restrictions – would not only be hollow, but would result in precisely the sort of "abstract exercise" that Congress sought to avoid. *Baltimore Gas and Electric Co.*, 462 U.S. at 100 ("Congress did not enact NEPA, of course, so that an agency would contemplate the environmental impact of an action as an abstract exercise.").[5]

For these reasons, it is commonplace for federal courts to issue injunctions pending agencies' compliance with NEPA, particularly when allowing the agency action to go forward will foreclose alternative courses of action that may entail less environmental damage and that the agency might elect to adopt based on its "hard look" in an EIS. *See* Daniel R. Mandelker, *NEPA Law and Litigation, 2d*, at § 4:61 (2008) ("In the usual case in which the court grants a preliminary injunction, it enjoins all further work until an adequate impact statement has been prepared or NEPA responsibilities have been met . . . .")

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[5] It is also noteworthy that the APA itself provides that reviewing courts "*shall* . . . set aside" agency action found to be arbitrary, capricious, or "otherwise not in accordance with law" or that was adopted "without observance of procedure required by law." 5 U.S.C. §§ 706(2)(A), (D) (emphasis added); *see also FCC v. NextWave Personal Comm'ns*, 537 U.S. 293, 300 (2003) ("The [APA] requires federal courts to set aside federal agency action that is 'not in accordance with law,' which means, of course, *any* law, and not merely those laws that the agency itself is charged with administering.") (emphasis in original) (internal citation omitted).

(citing cases from the Second, Fourth, Eighth, and Ninth Circuits); *see also* William Rodgers, *Environmental Law* § 7.7 at 767 (1977) ("[NEPA's] purpose is to require consideration of environmental factors *before project momentum is irresistible, before options are closed, and before agency commitments are set in concrete.*") (emphasis added); 42 U.S.C. § 4332(C)(iii) (requiring that EISs address "alternatives to the proposed action").

3. The common-sense rationale for preliminary injunctive relief in NEPA cases was fully articulated by the First Circuit in two seminal NEPA decisions – *Massachusetts v. Watt*, 716 F.2d 946 (1st Cir. 1983) (Breyer, J.) and *Sierra Club v. Marsh*, 872 F.2d 497 (1st Cir. 1989) (Breyer, J.). In both those rulings, the court employed the

> traditional balancing test for issuing injunctions for NEPA violations. *However, the Circuit analyzes the factors in light of the statute's purpose.* In two opinions by [then] Judge Breyer, the First Circuit developed a test that accounts both for NEPA's lack of substantive requirements and for NEPA's goal of making government officials consider environmental factors in decisionmaking. Specifically, the court held in these cases that an increased risk that environmental harm will result from poorly informed decisionmaking can constitute irreparable injury.

Herrmann, 59 U. Chi. L. Rev. at 1285 (emphasis added) (footnotes omitted).

In *Massachusetts v. Watt*, the court rejected the government's argument that there would be no irreparable injury if certain oil lease sales were allowed to proceed in violation of NEPA. The court explained that NEPA's "aim is to make government officials notice environmental considerations and take them into account," and

> [t]hus, when a decision to which NEPA obligations attach is made without the informed consideration that NEPA requires, the harm that NEPA intends to prevent has been suffered . . . NEPA in this sense differs from substantive environmental statutes, such as the [FWPCA]. The [FWPCA] focuses upon the 'integrity of the Nation's Waters, not the permit process.' *Weinberger v. Romero-Barcelo*, 456 U.S. at 314. NEPA does the converse.

716 F.2d at 952. The court further reasoned that "[o]nce large bureaucracies are committed to a course of action, it is difficult to change that course – even if new, or more thorough, NEPA statements are prepared and the agency is told to 'redecide,'" and for that reason it is "appropriate for the courts to recognize this type of injury in a NEPA case, for it reflects the very theory upon which NEPA is based – a theory aimed at presenting governmental decision-makers with relevant environmental data *before* they commit themselves to a course of action." *Id.* at 952-53 (emphasis in original).

In *Sierra Club v. Marsh* – decided after *Village of Gambell* – the First Circuit elaborated on its understanding that the "harm at stake" in a NEPA violation

> consists of the added *risk* to the environment . . . of uninformed choice, a risk that arises in part from the practical fact that bureaucratic decisionmakers (when the law permits) are less likely to tear down a nearly completed project than a barely started project.

872 F.2d at 500-01 (emphasis in original). The court further reasoned that "the kinds of 'harms' that are relevant, and that may be 'irreparable,'" at the preliminary injunction stage, "will be different according to each statute's structure and purpose." *Id.* at 502-03 (citing *Village of Gambell*, 480 U.S. at 543 n.9).

Hence, given that NEPA accomplishes its objectives solely by injecting environmental considerations into the decisionmaking calculus, when an agency is permitted by a court to implement its action without first preparing a legally required EIS, the specific injury that Congress enacted NEPA to prevent – *i.e.*, "the risk . . . that real environmental harm will occur through inadequate foresight and deliberation" by agency decisionmakers – is, as both a practical and a legal matter, rendered "irreparable" because there is unlikely to be *any other effective relief* that the court may issue at the conclusion of the case. *Sierra Club v. Marsh*, 872 F.2d at 502, 504. Accordingly, the "courts should take account of this harm and its potentially 'irreparable' nature" in determining whether to issue

a preliminary injunction, *id.*, although "[t]his is not to say that a likely NEPA violation automatically calls for an injunction; the *balance* of harms may point the other way." *Massachusetts*, 716 F.2d at 953 (emphasis in original).

4. The First Circuit's analysis is consistent with this Court's rulings in *Weinberger*, *Village of Gambell*, and other cases holding that the "choice" ordinarily available to courts sitting in equity is "whether a particular means of enforcing the statute should be chosen over another permissible means; *their choice is not whether enforcement is preferable to no enforcement at all.*" *Oakland Cannabis Buyers' Coop.*, 532 U.S. at 497-98 (emphasis added). Consequently, when an injunction is the *only* discernible "means of meaningfully complying with the statute" – as is generally the case when a court finds that an agency is pursuing an environmentally harmful action *before* preparing a legally mandated EIS – that should, at the very least, weigh heavily in the traditional injunction analysis because, otherwise, the court is in effect "ignor[ing] the judgment of Congress, deliberately expressed in" NEPA itself. *Id.* at n.9 (internal quotation omitted); *see also American Hosp. Supply Corp. v. Hosp. Products, Ltd.*, 780 F.2d 589, 594 (7th Cir. 1986) (because the "premise of the preliminary injunction is that the remedy available at the end of trial will not make the plaintiff whole," it follows that the "more limited that remedy, the stronger the argument for a preliminary injunction").

C. The Record Here Reflects, At Minimum, A Significant Risk Of Environmental Harm, And Hence Irreparable Injury, From The Navy's Implementation Of The Training Exercises Before Preparation Of A Legally Mandated EIS.

1. If the First Circuit's approach is applied here – as *amici* advocate – it is clear that, assuming that the Navy did violate NEPA by failing to prepare an EIS, respondents certainly demonstrated to the lower courts a sufficient risk of environmental harm stemming from that violation to establish irreparable injury "at the *threshold*" of the preliminary injunction analysis. *Massachusetts*, 716 F.2d at 952 (emphasis in original). Even aside from the fact that the government's position would leave respondents with no meaningful "means of enforcing" NEPA at all, *Oakland Cannabis Buyers' Coop.*, 532 U.S. at 498, even the Navy acknowledges that tens of thousands of marine mammals will in fact be adversely affected in some fashion by the training exercises at issue. See App. 75a; *see also* Resp. Br. at 6, 42-43. Moreover, the district court found that there was extensive record evidence – including detailed declarations from recognized marine mammal experts – establishing that the training exercises "*will cause widespread harm* to nearly thirty species of marine mammals."

including some with extremely small populations. App. 77a (emphasis added).[6]

Although the Navy evidently disagrees with these experts – some of whom have conducted extensive research on sonar impacts on marine life – it has yet to prepare an EIS addressing their specific concerns and, once again, even the government maintains that there is, at the very least, "considerable scientific uncertainty" regarding the actual effects of the training exercises, Pet. Br. at 39 (internal quotation omitted), especially because mid-frequency sonar "has been 'implicated as a contributing factor' in a number of mass stranding events in other locations. . . ." Pet. Br. at 41. Accordingly, where leading marine biologists have predicted far graver impacts than the government has acknowledged, and even the Navy implicitly concedes that it may prove to be wrong about the effects associated with the training exercises, this would appear to be the paradigmatic situation in which the serious "*risk* implied by a violation of NEPA is that real environmental harm will occur through inadequate foresight and deliberation."

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[6] *See, e.g.*, J.A. 471-72 (the training exercises "present a significant risk to marine mammals off California" and "could seriously impact marine mammals over very considerable distances, and at exposure levels that the Navy's analysis does not account for"); J.A. 475 (the "cumulative effects of 14 major exercises . . . may be highly significant for some California populations"); J.A. 602 ("mid-frequency active sonar in the Southern California operations area . . . poses a clear risk of severe injury and strandings" for various whale species).

and hence where the "irreparable injury" element of the traditional preliminary injunction analysis is easily satisfied. *Sierra Club v. Marsh*, 872 F.2d at 504 (emphasis added).

2. As the foregoing discussion suggests, the government's notion that the "considerable scientific uncertainty" surrounding the long-term environmental effects of the training exercises somehow cuts *against* the maintenance of the *status quo* while a legally mandated EIS is being prepared, Pet. Br. at 39, also runs counter to NEPA's fundamental purpose to ensure that federal agencies inform themselves to the "fullest extent possible," 42 U.S.C. § 4332, *before* taking action with potentially irreversible environmental impacts. Indeed, in keeping with NEPA's overarching design to ensure that the "agency will not act on incomplete information, *only to regret its decision after it is too late to correct*," *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 371 (1989) (emphasis added), the NEPA implementing regulations specifically provide that two of the factors *supporting* the need for an EIS are the "degree to which the possible effects on the quality of the human environment are *highly uncertain or involve unique or unknown risks*," and the "degree to which the effects on the quality of the human environment are *likely to be highly controversial*." 40 C.F.R. §§ 1508.27(b)(4), (5) (emphasis added).

Plainly, however, if "highly uncertain" and "highly controversial" environmental risks support preparation of an EIS before an action is implemented,

it makes no legal or logical sense for the very same factors to counsel *against* maintaining the *status quo* before the EIS can even be brought to bear on agency decisionmaking. Indeed, the NEPA implementing regulations contradict any such notion, by providing unequivocally that, until an agency *completes* the EIS process through issuance of a formal Record of Decision, "*no action concerning the proposal shall be taken* which would . . . [h]ave an adverse environmental impact." 40 C.F.R. § 1506.1(a)(1) (emphasis added); *see also* 40 C.F.R. § 1508.18 (defining a "major federal action" that necessitates preparation of an EIS as an action "with effects that *may be major* . . . Major reinforces but does not have a meaning independent of significantly.") (emphasis added); *cf. Nat'l Audubon Soc'y v. Hoffman*, 132 F.3d 7, 13 (2d Cir. 1997) ("When the determination that a significant impact will or will not result from the proposed action is a close call, an EIS should be prepared."); *Fritiofson v. Alexander*, 772 F.2d 1225, 1238-39 (5th Cir. 1985) (an EIS should be prepared when "the evidence before the court demonstrates that . . . the project *may* have a significant impact on the environment") (emphasis in original).[7]

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[7] The NEPA regulations further provide that if there is "incomplete information" that is "essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement." 40 C.F.R. § 1502.22(a). Accordingly, the NEPA scheme contemplates not only that the lack of scientific certainty is *not* a basis on which the EIS

(Continued on following page)

III. TO OBTAIN AN INJUNCTION FOR A NEPA VIOLATION IMPLICATING WILDLIFE IMPACTS, RESPONDENTS NEED NOT DEMONSTRATE SPECIES-LEVEL EFFECTS.

In arguing that respondents were not entitled to injunctive relief, the government also contends that they were required to explain how an injunction would "redress an 'injury to [respondents]' rather than an 'injury to the environment.'" Pet. Br. at 43 (quoting *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc.*, 528 U.S. 167, 180-81 (2000)). While that proposition is unassailable, the remainder of the government's syllogism – that respondents could only establish injury to themselves or their members by demonstrating a "likelihood of a harm to the *species as a whole*," Pet. Br. at 44 (emphasis added) – is impossible to reconcile with this Court's precedents, NEPA itself, or the record compiled below.

The government does not and cannot dispute that the "desire to use or observe an animal species, even for purely esthetic purposes, is undeniably a cognizable interest for purposes" of both injury in fact and irreparable injury analysis. *Lujan*, 504 U.S. at 562. Plainly, however, an individual's interest in "us[ing] or observ[ing] an animal species" may be gravely impaired *through adverse impacts on wildlife in a specific area frequented by the individual* regardless of whether the

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process should be avoided but, to the contrary, that the EIS *itself* may be used to fill crucial data gaps that impede informed decisionmaking.

"species as a whole" will be driven to extinction by the action under review. Indeed, respondents' declarations here aver not only that they derive substantial recreational and other benefits from marine mammals off the coast of southern California *in particular*, but that the training exercises at issue imperil those interests in ways that do not necessitate a showing of species-level effects, although respondents *did* make that showing as well. *See* Resp. Br. at 48.

To begin with, the organizational respondents have submitted numerous declarations from their members attesting that they reside in coastal southern California and that they routinely endeavor to "use or observe" or otherwise enjoy marine mammals and other marine life in and near the specific locations where the training exercises are occurring. *See, e.g.*, J.A. 387 ¶ 11 (the Navy is "using mid-frequency active sonar systems in and near waters where I dive, boat, and photograph, and in and near waters that provide habitat for the species of fish and marine mammals that I observe and enjoy"); J.A. 398-99 ¶¶ 14-15 ("I regularly dive, work, and recreate in the waters off the coast of Southern California, particularly around the Channel Islands. I regularly enjoy seeing whales, dolphins, and fish in these waters."); J.A. 418 ¶ 7 ("I have made numerous whale-watching trips off southern California and have observed Blue and Gray whales, dolphins, and other species in the Santa Barbara Channel and in other southern California waters."). Accordingly, respondents' members are precisely the persons who "would obviously be

concretely affected" by sonar use that *does* threaten the region's marine life in ways that should be analyzed in an EIS. *Lujan*, 504 U.S. at 573 n.8; *cf. id.* at 572 n.7 ("under our case law, one living adjacent to the site for proposed construction of a federally licensed dam has standing to challenge the licensing agency's failure to prepare an environmental impact statement").

Further, expert declarations and other record evidence point to several ways in which respondents' members' interests are threatened with serious irreparable injury regardless of whether the training exercises harm an entire species. First, scientists who have conducted empirical research on marine mammal abundance in various locations where mid-frequency sonar has been used in the past have observed "dramatic and statistically significant declines" in marine mammal presence in those areas. J.A. 591; *see also* J.A. 582 ("Based on my research, I am also concerned that the Navy's major exercises could cause wide-scale displacement of some species of cetaceans off the coasts of California and Mexico."); J.A. 583 ("Based on our research, I believe that there is significant potential for population-level effects, particularly if the displacement coincides with seasonal breeding or foraging."); J.A. 656 ("None of the Cuvier's beaked whales that we have documented in our nine-year study have returned since the March 15 naval exercise[.]").

Although, once again, the government disputes these experts' predictions that the training exercises

risk "population-level effects on marine mammal species off the coasts of California and Mexico," J.A. 591, even the Navy's EA estimates that many tens of thousands of marine mammals could suffer "behavioral harassment," J.A. 183, which, among other effects, entails a "*reluctance . . . to return to the site of a previous intense sound exposure*." J.A. 167 (emphasis added). But even such *displacement* of a large number of marine mammals from their traditional habitats along the coast of Southern California – with no assurance that they will ever return – threatens the ability of respondents' members to continue to observe and otherwise enjoy these animals in the future.

Such a "significant risk of irreparable harm" to respondents' longstanding recreational interests in wildlife observation is sufficient to support preliminary injunctive relief regardless of whether any species is in fact driven to extinction. *Greater Yellowstone Coal.*, 321 F.3d at 1261; *id.* at 1256 (threats to the "primary breeding area for bald eagles in the Greater Yellowstone area" qualified as irreparable injury to plaintiffs' interests even if plaintiffs did not "establish harm to the species as a whole"); *cf. Japan Whaling Ass'n v. American Cetacean Soc'y*, 478 U.S. 221, 230 n.4 (1986) (conservation organizations "undoubtedly have alleged a sufficient 'injury in fact' in that the *whale watching and studying of their members* will be adversely affected by continued whale harvesting") (emphasis added); *Adams v. Freedom Forge Corp.*, 204 F.3d 475, 484-85 (3d Cir.

2000) (the "irreparable harm requirement is met if a plaintiff demonstrates a significant risk that he or she will experience harm that cannot be compensated after the fact by monetary damages").

In addition to the risk that the training exercises will at the very least displace marine mammals and other wildlife from locations where respondents' members have enjoyed them for many years, respondents' members must also confront the prospect that they will observe an animal that has been killed, injured, or otherwise harmed by the Navy's use of mid-frequency sonar. *See, e.g.*, J.A. 446 ("This year, I have noticed an increase in the number of rescues of younger sea lions not yet weaned from their mothers. It appears to me that younger sea lions are dying off in higher numbers than they have in the past."); *id.* at 448 ("Harm to dolphins, whales, seals, sea lions, and other marine mammals in these areas . . . will reduce my chances of observing healthy marine mammals and increase my chances of encountering dead or lethally injured marine mammals"). Once again, therefore, because of the potentially significant *local* effects of the use of mid-frequency sonar, respondents' members – who regularly "use the affected area" – are surely "persons 'for whom the aesthetic and recreational values of the area will be lessened'

by the challenged activity." *Laidlaw*, 528 U.S. at 183 (internal citation omitted).[6]

The government's notion that respondents' showing of irreparable injury is dependent on definitive proof of species-level impacts is also impossible to reconcile with NEPA itself. Indeed, the NEPA implementing regulations recognize that an action may warrant consideration in an EIS solely because it has *locally or regionally* significant effects on the human environment. *See* 40 C.F.R. § 1508.27(a) ("Significance varies with the setting of the proposed action. For instance, *in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole.*") (emphasis added).

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[6] *See also Ala. Wildlife Alliance v. Jensen*, 108 F.3d 1065, 1068 (9th Cir. 1997) (plaintiffs challenging an agency decision to allow commercial fishing in Glacier Bay National Park suffered serious "aesthetic and recreational harm" by seeing "sea lions in the bay with huge trolling lures hanging from their mouths"); *Humane Soc'y of the United States v. Hodel*, 840 F.2d 45, 52 (D.C. Cir. 1988) (organizations' members were injured by federal actions that resulted in their witnessing "animal corpses and environmental degradation" at federal wildlife refuges); *Fund for Animals v. Clark*, 27 F. Supp. 2d 8, 14-15 (D.D.C. 1998) (the combination of the injury suffered by plaintiffs due to federal defendants' procedural failure to comply with NEPA and "the aesthetic injury the individual plaintiffs would suffer from seeing" bison being killed in a federally authorized hunt met plaintiffs' "burden of demonstrating the presence of an irreparable injury" in the absence of a preliminary injunction).

Accordingly, as the Court of Appeals correctly found, "[a]n agency action can have 'significant effects' on the environment" – and particularly on the wildlife resources enjoyed by respondents' members – short of threatened extinction." App. 66a; *see also Anderson v. Evans*, 371 F.3d 475, 490 (9th Cir. 2004) ("Even if the eastern Pacific gray whales overall . . . are not significantly impacted by the Makah Tribe's whaling, the summer whale population in the *local* Washington area may be significantly affected. Such local effects are a basis for a finding that there will be a significant impact from the Tribe's hunts.") (emphasis in original) (citing 40 C.F.R. § 1508.27(a)); *Fund for Animals v. Norton*, 281 F. Supp. 2d 209, 232-34 (D.D.C. 2003) ("[T]he impact of a proposed action on a local population of a species, even where all parties acknowledge that the action will have little or no effect on [a] broader population is a basis for finding that there will be a significant effect" that should be studied in an EIS) (internal quotation omitted). It surely makes no sense to hold that a level of environmental injury that is sufficient to trigger the EIS requirement – as is indisputably the case for locally or regionally significant wildlife impacts – is, at the very same time, legally incapable of supporting an injunction while that EIS is being prepared.[9]

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[9] Although it has no discernible relevance to this case, it is unclear what the government means when it argues that respondents lack a "*legally* cognizable interest in *individual members* of a species" that may be affected by the action under

(Continued on following page)

IV. THE NAVY'S PREPARATION OF AN ENVIRONMENTAL ASSESSMENT DOES NOT NEGATE THE NEED FOR AN EIS.

Contrary to the government's contention, the Navy's preparation of an extensive EA does not mean that the Navy should proceed with its training exercises in the absence of a legally mandated EIS. *See* Pet. Br. at 49. Indeed, the CEQ has instructed that "[i]n most cases . . . a lengthy EA *indicates that an EIS is needed*" because it reflects that, at minimum, "it is extremely difficult to determine whether the proposal could have significant environmental effects." *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, 46 Fed. Reg. 18026, 18037 (1981); *see also Sierra Club v. Marsh*, 769 F.2d 868, 874 (1st Cir. 1985) (Breyer, J.) ("To announce that these documents – despite their

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review. Pet. Br. at 43 (emphasis added). Since *Association of Data Processing Serv. Organizations v. Camp*, 397 U.S. 150 (1970), it has been well established that to demonstrate Article III standing a plaintiff need not establish an injury to a "legal right" or a "legal interest," but, rather, must simply document an "injury in fact" that is fairly traceable to the challenged action or omission. *Id.* at 153; *see also Simon v. Eastern Ky. Welfare Org.*, 426 U.S. 26, 39-40 (1976). In any event, this Court has clearly held that a *"person who observes or works with a particular animal* threatened by a federal decision is facing perceptible harm, since the very subject of his interest will no longer exist." *Lujan*, 504 U.S. at 560-61 (emphasis added). Accordingly, although in this case respondents have apparently not relied on an injury pertaining to their relationship with any "particular animal," it is *not* the law that either standing or irreparable injury may never be based on such a harm.

length and complexity – demonstrate no need for an EIS is rather like the mathematics teacher who, after filling three blackboards with equations, announces to the class, 'You see, it is obvious.'").

More important, contrary to the government's contention that the central purpose of NEPA is "fully served" through preparation of an EA, Pet. Br. at 49, the reality is that "an EA and an EIS serve very different purposes" in the NEPA statutory scheme. *Sierra Club*, 769 F.2d at 875. Consequently, the courts have held that "under NEPA and its implementing regulations" an EA cannot be accepted "as a *substitute* for an EIS" regardless of the "time, effort, and analysis that went into [the EA's] production." *Id.* at 875 (emphasis in original); *id.* at 874 (finding that an EA "consisting of at least seven documents containing 350 pages of text, plus numerous pages of diagrams, maps, and technical drawings" did not render an EIS superfluous); *see also Anderson*, 371 F.3d at 494.

An EA is a device created by the CEQ regulations for the principal purpose of providing agency decisionmakers with "'sufficient evidence and analysis for *determining whether to prepare an [EIS].*'" *Public Citizen*, 541 U.S. at 757 (emphasis added) (quoting 40 C.F.R. § 1508.9(a)); *see also Weinberger v. Catholic Action of Hawaii/Peace Education Project*, 454 U.S. 139, 141 n.1 (1981) (An EA "is a document prepared by a federal agency in order to determine whether a formal [EIS] should be prepared."). Accordingly, when, as here, the agency concludes an EA with a determination that the agency's proposed action "*will not have a significant*

impact or cause significant harm to the environment, and as a result, an [EIS] need not be prepared," J.A. 226 (emphasis added), the clear message to agency decisionmakers is that no *further* steps need be taken to reduce environmental effects or to consider less environmentally destructive alternatives.

In contrast, when an agency does prepare an EIS in accordance with section 102(C) of NEPA, the agency is recognizing that there *are* potentially significant environmental impacts that should at least be carefully weighed in the decisionmaking process. Simply put, therefore, "[t]o treat an EA as if it were an EIS would confuse these different roles, to the point where neither the agency nor those outside it could be certain that the government fully recognized and took proper account of environmental effects in making a decision with a likely significant impact on the environment." *Sierra Club*, 769 F.2d at 875.

Further, consistent with the different legal functions served by the documents, the CEQ regulations impose far more stringent requirements on the preparation of EISs, including an obligation by the agency to engage in an "early and open process for determining the scope of issues to be addressed," 40 C.F.R. § 1501.7, as well as other opportunities for the affected public and federal and state natural resource agencies to weigh in on the agency's proposed course of action. *Sierra Club*, 769 F.2d at 875 (citing 40 C.F.R. §§ 1503.1, 1506.6).

EISs also must "[r]igorously explore and objectively evaluate all reasonable alternatives" to the agency's

preferred action. 40 C.F.R. § 1502.14. Yet although that obligation lies at the "heart of the [EIS]" process, *id.*, it surely was not satisfied by the Navy's EA, which did not even meaningfully address alternative safeguards that the Navy *itself* has incorporated into other training exercises. *See* Resp. Br. at 8, 43 n.13. In short, as this case illustrates and as the courts have consistently held, it is simply not the case that an EA serves the same legal or practical "purpose," Pet. Br. at 49, as a legally mandated EIS. *See also Anderson*, 371 F.3d at 494 ("[A]n EIS serves different purposes from an EA. An EA simply assesses whether there will be a significant impact on the environment . . . Preparation of an EIS [] ensures that decision-makers know that there is a risk of significant environmental impact and take that impact into consideration."); *Seneville v. Peters*, 327 F. Supp. 2d 335, 369 (D. Vt. 2004)."

For similar reasons, the government's suggestion (at 49) that *non*-NEPA documents prepared by NMFS could replicate the function of an EIS is baseless. Indeed, none of these documents was ever exposed to prior public comment or scrutiny by non federal scientists, let alone prepared in accordance with the rigorous requirements that apply to EISs. Moreover, as NMFS has itself recently recognized, its analysis of "cumulative effects" for purposes of ESA compliance is "narrower than the NEPA definition of cumulative impacts." 73 Fed. Reg. 47869 (2008). That discrepancy is especially important here, where the "cumulative effects of 14 major exercises – *particularly when considered alongside future events and other naval exercises in the same areas* – may be highly significant for some California populations" of marine mammals. J.A. 475 (emphasis added).

CONCLUSION

For the foregoing reasons, the Court should reject the government's argument that respondents did not demonstrate sufficient irreparable harm to support issuance of a preliminary injunction.

Respectfully submitted,

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AMICUS CURIAE BRIEF

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DONALD C. WINTER, SECRETARY OF THE NAVY *ET AL.*,
PETITIONERS

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC. *ET AL.*,
RESPONDENTS

ON WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

BRIEF FOR THE ECOLOGICAL SOCIETY OF AMERICA AS *AMICUS CURIAE* IN SUPPORT OF RESPONDENTS

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INTEREST OF *AMICI CURIAE*

Amici curiae are professors at UCLA Law School. Each of the *amici* has particular expertise and interest in the area of the separation of powers among the branches of the national government. *Amici* believe that, if it is adopted, Petitioners' position would threaten the integrity of injunctions of Article III courts by empowering executive branch agencies to defy judicial rulings with which they disagree.[1]

INTRODUCTION

The case poses an important constitutional question: whether a federal agency may effectively nullify an Article III court's injunction, entered under a federal statute, by issuing a subsequent ruling in an administrative tribunal that disagrees with the factual basis of the injunction. This question implicates vital safeguards that are intended to protect the federal judiciary from encroachments by the political branches of the national government -- and, in the process, to protect the liberty of us all. *Amici* submit that the executive branch exceeded separation of powers boundaries here in seeking to vitiate a district court's injunction through a later contrary administrative ruling of its own that redetermined the factual issues decided by the district court.

Injunctions issued by a district court under federal statutes may be reversed in two ways: by an order of a "superior court[] in the Article III hierarchy"

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[1] This brief is filed with the written consent of all parties. Pursuant to Rule 37.6, no counsel for either party authored this brief in whole or in part, nor did any party make a monetary contribution to the preparation or submission of this brief.

disagreeing with the district court's interpretation of what is required by the law on which the injunction rests, *Plaut v. Spendthrift Farms, Inc.*, 514 U.S. 211, 219 (1995), or by an act of Congress, in the exercise of its lawmaking powers under Article I of the Constitution, that prospectively changes the law and thereby eliminates the legal basis of the injunction going forward. *Id.* at 232; *Miller v. French*, 530 U.S. 327, 347 (2000).

Petitioners are advocating a new, third way in which injunctions of Article III courts entered under federal statutes may be overturned: through a waiver issued by an executive branch officer in an administrative tribunal when the officer disagrees with the district court's application of the law to the facts of the case. Specifically, Petitioners maintain that the injunction entered by the district court here must be vacated by dint of a pronouncement of the Council on Environmental Quality ("CEQ"), an Article II agency created by Congress to assist in the implementation of the National Environmental Policy Act ("NEPA"), the very law on which the injunction is predicated. According to Petitioners, the CEQ's administrative ruling exempts them from compliance with NEPA, as construed and applied by the district court, and thereby requires nullification of the injunction. Petitioners' position has no moorings in this Court's separation of powers precedents.

Petitioners' position contravenes the two-centuries-old teaching of *Hayburn's Case*, 2 U.S. (2 Dall.) 409, 410 (1792), that decisions of Article III courts may not be overruled by Article II officers. *See also Plaut*, 514 U.S. at 218. This bedrock principle ensures that, consistent with Article III's case or controversy requirement, the federal judicial power is not utilized for the purpose of providing purely advisory opinions on

the meaning of the law and the application of the law to a given set of facts, which litigants are free to ignore. On Petitioners' theory of executive review of judicial decisions, however, Article III courts would be pressed into the service of authoring advisory opinions because the final word on the application of the law in a particular case would not be found in what federal judges say, but rather, in what executive branch officers, sitting as veritable courts of errors, say afterwards.

This is not a case in which the prospective effect of an injunction was altered by a subsequent change in the underlying law on which the injunction rests. *Compare Miller*, 530 U.S. at 347. The CEQ did not change NEPA. Nor could it, for only Congress may amend the nation's laws. Rather, the CEQ simply disagreed with the factual predicate of the district court's injunction. This Court has never held, however, that Congress could delegate authority to executive branch officers to convene administrative tribunals and therein issue rulings that nullify the factual basis of injunctions -- and the Court's precedents suggest that Congress could do no such thing. In any event, whether Congress could give that power to an agency is not raised by this case because NEPA does not license the CEQ to overturn the decisions of Article III courts.

In cases in which the legislative or executive branch (or both) of the national government has encroached on the constitutional authority of the federal judiciary, this Court frequently has returned to first principles, admonishing that, under Article III, "[i]t is . . . the province and duty [of the judicial department] to say what the law is." *Plaut*, 514 U.S. at 218 (quoting *Marbury v. Madison*, 1 Cranch 137, 177 (1803)); *see also City of Boerne v. Flores*, 521 U.S. 507, 536 (1997). The district court carried out that core judicial function here. It said what the law is and applied that law to the

facts of this case. At that point, it was not for the CEQ to say otherwise in a post-hoc administrative tribunal that purported to jettison the district court's ruling in favor of the CEQ's preferred application of the law to the facts.

I. SEPARATION OF POWERS PRINCIPLES PRECLUDE EXECUTIVE AGENCIES FROM NULLIFYING AN INJUNCTION OF AN ARTICLE III COURT BY ISSUING A SUBSEQUENT RULING, AS A COURT OF ERRORS IN AN ADMINISTRATIVE TRIBUNAL, THAT DISAGREES WITH AND REDETERMINES THE FACTUAL BASIS OF THE INJUNCTION.

Congress has determined that the requirements of NEPA should apply to the Department of the Navy, just as they do to other federal agencies. Respondents brought this action against the Navy to enforce those requirements. After reviewing an extensive factual record, the district court found that the Navy violated NEPA by failing to prepare a statement on the environmental impact of certain training exercises that it intended to conduct off the coast of California. App. 195a-218a. To remedy that violation, the district court issued a preliminary injunction that enables the Navy to conduct its exercises, provided that it adheres to a concrete set of measures that the court adopted to mitigate the environmental impact of the exercises. App. App. 164a-174-a.

The Navy sought review of the district court's injunction in the court of appeals through the ordinary appellate process contemplated by Article III. Pet. Br. 14. *See Plaut*, 514 U.S. at 219 (federal district court rulings are subject to review by "superior courts in the Article III hierarchy"). But the Navy also simultaneously forged a separate and novel "appellate"

channel outside the bounds of Article III: it asked the CEQ, an executive branch agency charged by Congress with aiding other agencies in the implementation of NEPA, 42 U.S.C. § 4344, to review the factual basis of the district court's injunction. Pet. Br. 14-15.

The Navy treated both of its "appeals" equally. It made exactly the same pitch to the CEQ as it made to the court of appeals, arguing in both venues that compliance with the district court's injunction would compromise the proposed training exercises. And the Navy sought the same relief from the CEQ that it sought from the court of appeals: reversal of the injunction. Pet. Br. 14-15.

The CEQ proved to be a receptive audience for the Navy. It convened an ex parte administrative tribunal at which it heard the same evidence and arguments that the Navy had presented to the district court (but not the evidence and arguments Respondents had presented). Resp. Br. 11. Within a matter of days of that quasi-judicial hearing, and before the court of appeals could consider the matter, the CEQ expressed disagreement with the factual findings underpinning the district court's injunction, and issued counter-findings of its own, which were memorialized in a letter to the Navy. *Id.* The CEQ's letter stated that the Navy could disregard the environmental mitigation measures crafted by the district court and announced that the Navy was instead free to conduct its training exercises pursuant to "alternative arrangements" blessed by the CEQ. Pet Br. 15; Resp. Br. 11.

The CEQ's letter opined that its administrative ruling effectively overturning the district court's injunction was authorized by an existing agency regulation, which states that the CEQ may approve alternative arrangements for NEPA compliance in "emergency circumstances." Pet Br. 15 (quoting 40

C.F.R. § 1506.11). But Congress did not delegate power to the CEQ to sit in review of Article III courts. CEQ's primary function, as assigned by Congress, is to assist in implementing national environmental policy. Resp. Br. 21. Nor does the emergency regulation itself state that CEQ may countermand the ruling of an Article III court whenever the CEQ believes that the court got it wrong and that the circumstances warrant substitution of the CEQ's ruling for that of the court's. In fact, until this case, the CEQ had never invoked the emergency regulation as authority to declare that an agency could act contrary to the decision of an Article III court interpreting NEPA.

Nevertheless, armed with the CEQ's letter, the Navy returned to the district court and asserted that the CEQ's approval, pursuant to its emergency regulation, of alternative NEPA arrangements for the conduct of the training exercises dictated that the district court vacate its injunction. Resp. Br. 11-12. The district court rejected the Navy's contention and it left the injunction in place. *Id.* 12. The court of appeals followed suit (albeit making slight modifications to the injunction). *Id.*

The Navy's insistence that the district court was obligated to vacate its injunction in light of the CEQ's ruling in an administrative tribunal disagreeing with the factual and legal basis of the injunction, Pet. Br. 23-24, conflicts with a venerable separation of powers tenet, dating back to the early days of the republic: decisions of Article III courts may not be subject to revision by executive officials and thereby converted into purely advisory opinions that lack any binding clout.

Petitioners' opening brief evades this constitutional issue altogether. To this point in the proceedings before this Court, all Petitioners have said about the constitutional issue is to claim that no separation of

powers problem exists here. Citing *Miller v. French*, *supra*, and *Robertson v. Seattle Audubon Soc'y*, 503 U.S. 429 (1992), in which this Court upheld against separation of powers challenges acts of Congress that vitiated the legal basis of existing federal court injunctions, Petitioners have argued that the CEQ's action is constitutionally tolerable because it merely "chang[ed] . . . the underlying law" on which the injunction was predicated, and thus sapped the "ongoing vitality of [the] prospective equitable relief" afforded by the injunction. Reply Supporting Cert. Pet. 6. Petitioners' reliance on *Miller* and *Robertson* is misplaced because the CEQ did not change the underlying law: it merely disagreed with the factual basis of the injunction and thus, in flat conflict with *Hayburn's Case*, sought to interpose its view in place of the district court's. In any event, the constitutional power to change a law, and thereby alter injunctions that rested on the law before it was changed, resides with Congress, not with administrative agencies.

A. Decisions Of Article III Courts May Not Be Subject To Revision By Executive Officers And Thereby Reduced To Purely Advisory Opinions.

Time and again, this Court has stated that the Constitution's enumeration and separation of the powers of the three branches of the national government bars Article II executive officers from revising the decisions of Article III courts. *See, e.g.*, *Plaut*, 514 U.S. at 218; *United States v. Mitchell*, 463 U.S. 206, 213 n.12 (1983); *Chicago & Southern Air Lines, Inc. v. Waterman Steamship Corp.*, 333 U.S. 103, 113-14 (1948); *United States v. Jefferson Elec. Mfg. Co.*, 291 U.S. 386, 400-01 (1934); *United States v. Waters*, 133 U.S. 208, 213 (1890); *see also Alaska Dep't of Envtl. Conservation v. EPA*, 540 U.S. 461, 512 (2004) (Kennedy, J., dissenting).

This essential constitutional postulate is rooted in the Court's 1792 ruling in *Hayburn's Case*. There, this Court considered an act of Congress that authorized an executive officer, the Secretary of War, to review decisions of Article III courts related to pension claims and to set aside those court decisions as the Secretary saw fit. Sitting as Circuit Justices, five members of this Court stated emphatically that the legislation intruded on the power to resolve concrete legal disputes that is assigned to the judiciary (and to the judiciary alone) by Article III, because it made the outcome of court cases subject to the control of executive officers. The process of executive review of court decisions set up by the legislation was deemed to be "radically inconsistent with the independence of that judicial power which is vested in the courts." 2 U.S. at 410 n.d.

Hayburn's Case is a fixture of separation of powers jurisprudence. *See North Carolina v. Rice*, 404 U.S 244, 246 (1971); *Muskrat v. United States*, 219 U.S. 346, 351-53 (1911). It has long since stood for the proposition that executive officers are constitutionally forbidden from "annul[ing] a final judgment" of an Article III court and thereby taking over a quintessential judicial function. *Plaut*, 514 U.S. at 224. *See Loving v. United States*, 517 U.S. 748, 757 (1996) ("Although separation of powers does not mean that these three departments ought to have no partial agency in, or no control over the acts of each other, it remains a basic principle of our constitutional scheme that one branch of the Government may not intrude upon the central prerogatives of another.") (internal quotations omitted).

The proscription on executive action reversing or otherwise revising the decisions federal courts that is traceable to *Hayburn's Case* reinforces the case or controversy requirement of Article III, which limits the exercise of the judicial power to the resolution of

concrete legal disputes, *Lewis v. Continental Bank Corp.*, 494 U.S. 472, 477 (1996), and precludes the judiciary from issuing advisory opinions – that is, rulings that are "not binding and conclusive on the parties. . . ." *Chicago & Southern Air Lines*, 333 U.S. at 114. *See Plaut*, 514 U.S. at 219 ("Judicial power is one to render dispositive judgments. . . ."); William Baude, *The Judgment Power*, 96 Geo. L.J. 1807, 1811 (2008) ("[T]he judicial power is the power to issue binding judgments and to settle legal disputes within the court's jurisdiction.").

Indeed, this Court frequently has linked the ban on executive revision of judicial decisions to the ban on advisory opinions. *Chicago & Southern Air Lines* is illustrative. Writing for the Court in that case, Justice Jackson stated unequivocally that a federal court decision on the legality of executive branch action that, in turn, is subject to review and reversal by the executive branch itself would be diametrically at odds with the Article III case or controversy requirement. As Justice Jackson bluntly put it, such a decision would possess "only the force of a recommendation to the [executive branch]," and, as such, would amount to "an advisory opinion in its most obnoxious form. . . ." *Chicago & Southern Air Lines*, 333 U.S. at 114.

The actions of the CEQ and the Navy in this case ran afoul of these basic separation of powers precepts. The Navy was dissatisfied with the district court's injunction conditioning the conduct of the Navy's proposed training exercises on compliance with specified measures to remedy the Navy's NEPA violation. For relief from the injunction's strictures, the Navy turned not just to the court of appeals, but to a fellow executive branch agency -- the CEQ, which agreed with the Navy's plea, lock, stock, and barrel. In an ex parte administrative proceeding, the CEQ ruled that the Navy

had license to disregard the injunction by virtue of alternative NEPA arrangements devised by the CEQ under its "emergency" regulatory authority.

In short, at the Navy's urging, the CEQ disagreed with the basis of the district court's injunction and purported to reverse it in violation of the cardinal rule that executive branch officers may not revise the decisions of Article III courts. And if the district court were required to honor the CEQ's contrary determination and vacate its injunction on account of the agency's divergent findings, this would, in effect, convert the district court's initial decision concerning the application of NEPA to a particular set of facts into a mere advisory opinion. At the same time, the CEQ's proclamation, issued after the fact in an administrative tribunal, would be elevated to be the definitive word on the Navy's compliance with NEPA. Simply put, under the scheme of agency review of judicial decisions advocated by Petitioners, the district court proceedings were just a side show -- all that really mattered is what the CEQ subsequently said when it placed itself in judgment of the injunction and nullified it. Our system of separation of powers does not, however, countenance such a scheme. *See Seminole Tribe of Florida v. Florida*, 517 U.S. 44, 99 (1996) (Stevens, J., dissenting) ("[I]t is extremely doubtful that the obviously dispensable involvement of the judiciary in the intermediate stages of a procedure that begins and ends in the Executive branch is a proper exercise of judicial power.").

An executive branch agency that is on the losing end of a court decision may not seek to evade the decision by appealing to another executive branch agency to reverse it. *See* Baude, 96 Geo. L. J. at 1810 ("Just as the loser cannot respond to a judgment on the merits by saying 'but the law is on my side! he cannot appeal to the

Executive. . . to overrule it."). Executive branch agencies are not situated within the Article III chain of command. They therefore have no constitutional authority to act like appellate judges and "reverse" lower court injunctions of which they disapprove.

Ultimately, Petitioners fall back on the notion that because the country presently is at war, the CEQ's action in permitting the Navy to conduct its training exercises unfettered by the district court's injunction must be sustained to serve pressing national security interests. Pet. Br. 32-34. But as this Court observed just last Term, "security subsists . . . in fidelity to freedom's first principles." *Boumediene v. Bush*, 128 S. Ct. 2229, 2277 (2008). Among those first principles is that the Framers' purpose in separating and dividing the powers of the branches of the national government was "to secure liberty," not for the sake of the government's branches themselves, but for the sake of the people the government serves. *Youngstown Sheet & Tube Co. v. Sawyer*, 343 U.S. 579, 635 (1952) (Jackson, J., concurring); *see also Clinton v. New York*, 524 U.S. 417, 452 (1997) (Kennedy, J., concurring). This Court repeatedly has warned that our liberties are threatened when one branch of the national government encroaches on another branch's powers and seeks to aggrandize its own. *See Mistretta v. United States*, 488 U.S. 361, 380-81 (1989); *Bowshar v. Synar*, 478 U.S. 714 722 (1986); *Buckley v. Valeo*, 424 U.S. 1, 122 (1976); *see also Clinton*, 524 U.S. at 449 (Kennedy, J., concurring) ("Liberty is always at stake when one or more of the branches seek to transgress separation of powers.")

The resolution of separation of powers questions must be informed by considerations of the practical needs of the national government to carry out its responsibilities, particularly when the nation is at war.

Boumediene, 128 U.S. at 2276; *Youngstown*, 343 U.S. at 611-12 (Frankfurter, J, concurring). Indeed, the district court took those considerations into account in fashioning the scope of equitable relief here. Resp. Br. 51-52. Asserted wartime exigencies are not, however, reason to abandon the guarantees of liberty that our system of separation of powers affords. *See Boumediene*, 128 S. Ct. at 2277 ("The laws and Constitution are designed to survive, and remain in force, in extraordinary times. Liberty and security can be reconciled, and in our system they are reconciled within the framework of the law."); *see also Clinton*, 524 U.S. at 449 (Kennedy, J., concurring) ("The Constitution's structure requires a stability which transcends the convenience of the moment.")

The CEQ's power grab is antithetical to that system. Condoning the CEQ's action would be an invitation to every agency of the federal government to declare an "emergency" any time the agency thinks that an Article III court has impeded activities that the agency deems essential, especially in wartime. A key function of an independent judiciary is to ensure that the executive branch does not stray from the law, be it in wartime or not. Under Petitioners' theory of executive review, however, the executive itself gets to decide what is within the bounds of the law and to take any action that it considers necessary, even when an Article III court has declared those actions to be out of bounds.

B. The CEQ's Administrative Ruling Disagreeing With The Factual Basis Of The District Court's Injunction Did Not Change The Law On Which The Injunction Rests, And, In Any Event, The Power To Effect Such Legislative Changes Resides With Congress, Not With Administrative Agencies.

Like executive agencies, Congress too generally may not annul the judgments of Article III courts. *Plaut*, 514 U.S. at 224. This rule gives way, however, in the narrow circumstance in which Congress passes, and the President signs into law, legislation that "alter[s] the prospective effect of previously entered injunctions." *Id.* at 232. The enactment of such legislation does not impermissibly encroach on the judicial power, even if the consequence of the legislation is to require the district court to terminate an existing injunction. As this Court has explained, "[p]rospective relief under a continuing, executory decree remains subject to alteration due to changes in the underlying law." *Miller*, 530 U.S. at 345. Thus, if "Congress has altered the relevant law" on which an injunction rests, the injunction must be modified -- and perhaps even vacated -- by the district court to take those changes of law into account. *Id.* at 345-46. *See* Laurence H. Tribe, 1 *American Constitutional Law* 284 (3d.ed. 2000) ("Congress is not barred by separation-of-powers considerations from changing the law applicable to an identifiable set of cases pending in the federal courts, even when that is Congress' clear purpose, provided it does so by altering the background law *itself* . . . .") (emphasis in original).

The Court has applied this separation of powers principle in only a few instances. The leading case is *Pennsylvania v. Wheeling & Belmont Bridge*, 59 U.S. (18 How.) 421 (1855). It arose from legislation passed

by Congress declaring a particular bridge across the Ohio River to be a lawful structure. *Id.* at 429. Previously, this Court had held, under a then-existing law, that the bridge was an unlawful structure, and ordered that the bridge be raised or removed. Pennsylvania argued that the later act of Congress deeming the bridge to be lawful was unconstitutional on separation of powers grounds because it annulled this Court's earlier judgment declaring the bridge to be unlawful. This Court rejected Pennsylvania's challenge. It held that the legal foundation of the Court's injunction against the bridge was eliminated once Congress changed the law via the intervening statute. *Id.* at 431-32. *See Miller*, 530 U.S. at 345-46 (discussing *Wheeling & Belmont Bridge* and stating that "[w]hen Congress altered the underlying law such that the bridge was no longer an unlawful obstruction, the injunction against the maintenance of the bridge was not enforceable.").

The Court also had occasion to apply the principle that Congress may cause the termination of an injunction by changing the law on which the injunction rests in *Robertson v. Seattle Audubon Soc'y*, *supra*. That case arose from litigation that had resulted in the entry preliminary injunctions against the government under federal environmental statutes. In response to the litigation, Congress passed a new law that modified the criteria for assessing whether the government was in compliance with those statutes. 503 U.S. at 431-34. The Court held that new law did not violate the separation of powers because it merely changed the legal standards under which the courts could maintain prospective relief in the pending litigation that had prompted Congress to act, and in future litigation involving the relevant statutes as well. *Id.* at 439-40.

More recently, in *Miller v. French*, *supra*, the Court considered a separation of powers challenge to an act of Congress, the Prison Litigation Reform Act ("PLRA"), that set forth new legal standards for the entry and maintenance of injunctive relief in prison conditions litigation in federal courts. The PLRA required federal courts to suspend, and, in some instances, terminate, injunctions issued under prior legal standards. 530 U.S. at 333-35. Citing *Wheeling & Belmont Bridge*, this Court held that the PLRA did not offend separation of powers principles because in "establishing new standards for the enforcement of prospective relief . . . Congress ha[d] altered the relevant underlying law," and therefore pre-existing injunctions affording such relief under the old standards were "no longer enforceable to the extent [they were] inconsistent with the new law." *Id.* at 347.

Petitioners' attempt to fit the CEQ's actions here within the ambit of the separation of powers principle articulated in *Wheeling & Belmont Bridge*, *Robertson*, and *Miller* is unavailing for two reasons.

First, the CEQ did not effect a change in the underlying law in declaring an emergency and issuing its letter exempting the Navy from compliance with the injunction. Rather, the CEQ just disagreed with the district court's factual determination that compliance with the injunction would not impede the ability of the Navy to carry out the sonar exercises. Such executive redetermination of the bases of decisions of Article III courts and revision of those decisions is exactly what is forbidden by *Hayburn's Case*.

Second, in *Wheeling & Belmont Bridge*, *Robertson*, and *Miller*, it was *Congress*, through the exercise of its Article I lawmaking power, that changed the underlying

law on which pre-existing injunctions had rested.[2] There is absolutely no suggestion in those cases, or anywhere else in this Court's jurisprudence for that matter, that an executive agency can compel district courts to terminate injunctions by issuing a ruling in a quasi-judicial administrative tribunal that changes "the law" on which the injunctions are predicated.[3]

The proposition that only Congress, and not the executive, can direct the termination of injunctions through changes in relevant underlying legislation is in keeping with the division of functions between the two political branches. As the Court repeatedly has emphasized, "[t]he lawmaking function belongs to Congress," not to the executive. *Loving*, 517 U.S. at 758.

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[2] In such cases, Congress does not itself reverse the injunction, but instead, establishes grounds for the district court to modify the injunction, in accord with the court's traditional authority to alter an injunction in response to changed legal or factual circumstances. *See Railway Employees v. Wright*, 364 U.S. 642, 646-47 (1961).

[3] As Respondents point out, Congress could have exempted the Navy's sonar training exercises from NEPA before the district court entered its preliminary injunction; Congress did not do so, however. Resp. Br. 33. By the same token, Petitioners could have sought a NEPA exemption from Congress after entry of the injunction, and then, based on the *Wheeling & Belmont Bridge* line of cases, could have requested that the district court terminate the injunction in light of Congress' modification of NEPA. Even then, however, it would not be clear whether those cases actually would support termination of the injunction in circumstances in which a change in law applies only to one injunction in a single court case. *See Robertson*, 503 U.S. at 441 (noting that Court did not decide whether a "change in law, prospectively applied, would be unconstitutional if the change swept no more broadly, or little more broadly than the range of applications at issue in pending cases"). That is precisely what CEQ has sought to do here. Its purported "change in the law" is not cross-cutting. It is good for just this one set of training exercises, and for just this one injunction barring those exercises.

This lawmaking function encompasses the power to "unmake" laws, *i.e.* to amend or repeal them. *Clinton v. New York*, 524 U.S. 417, 438 (1997); *INS v. Chadha*, 462 U.S. 919, 954 (1983). Congress may not abdicate its legislative power to make or unmake laws and pass it off to the executive. *Clinton*, 524 U.S. at 438; *Loving*, 517 U.S. at 771.

To be sure, this Court has held that Congress may delegate authority to the executive to suspend the operation of laws in the event that future contingencies, specified in advance by Congress, are later found by the executive to have occurred. *Field v. Clark*, 143 U.S. 649, 693 (1897) (upholding statute directing President to suspend tariff exemptions for particular imports if the President determined that certain conditions delineated by Congress in the tariff statute subsequently came to pass); *see also Clinton*, 524 U.S. at 444-45. But these precedents do not support the idea that Congress can delegate authority to the executive to convene administrative tribunals for the purpose of revisiting the propriety of injunctions and suspending those judgments by suspending the legislation on which they rest. Put another way, this Court has never suggested that an injunction of an Article III court, predicated on the application of an existing federal statute, can itself be a "future contingency" that Congress may direct the executive to consider in deciding whether to suspend that statute. Any such delegation of power to the executive would run head on into the well-established maxim, derived from *Hayburn's Case* itself, that "Congress cannot vest review of the decisions of Article III courts in officials of the Executive Branch." *Plaut*, 514 U.S. at 218. For Congress to call on the executive to treat an Article III court's injunction as a future contingency warranting the suspension of a law on which the injunction is based would be tantamount to

calling on the executive to review the Article III court's ruling and reverse it.

This Court need not decide, however, in this case whether Congress could delegate authority to the executive branch to effectively suspend an injunction of an Article III court by issuing an administrative ruling suspending the relevant law on which the injunction rests, because no such authority has been granted to CEQ.[4]

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4 By contrast, in the Coastal Zone Management Act ("CZMA"), Congress has expressly delegated the authority to the President to exempt federal agency activities from compliance with that statute when a federal court previously has determined that the agency's activities do not comply with the statute and issued an injunction requiring the agency to take measures to come into compliance. The President is authorized to issue such post-hoc exemptions if he determines that the agency activity that the federal court found to be out of compliance with the CZMA is 'in the paramount interest of the United States." 16 U.S.C. § 1456(c)(1). Respondents originally brought this action under both NEPA and the CZMA, and the district court originally entered its injunction under both statutes. Pet. Br. 11-12. The President subsequently invoked the CZMA exemption, and thus sought to waive the Navy's compliance with the portions of the CZMA that the district court had said that the Navy had violated. *Id.* 14. The issuance of the presidential exemption under the CZMA occurred contemporaneously with the issuance of the CEQ's purported NEPA-based exemption *Id.* In the district court, Petitioners cited both the presidential and CEQ exemptions as a basis for vacating the injunction. *Id.* 15. The district court questioned the constitutionality of the CZMA exemption on the grounds that it vests the executive with power to revise injunctions of Article III courts. App. 126-135a. The district court did not decide that constitutional question, however, because it concluded that the injunction could rest on NEPA alone. Pet. Br. 15. And as it comes to this Court, the injunction is not based on the CZMA. Accordingly, this Court need not resolve the constitutionality of the CZMA exemption.

Nor does this Court have to decide whether an agency could, through notice and comment rulemaking under the Administrative

And at the end of the day, this Court could avoid constitutional questions altogether by holding that the CEQ's emergency regulatory authority does not encompass the power to assume the judicial-like mantle of overruling injunctions of Article III courts. The doctrine of avoiding constitutional questions is particularly well-suited for application here because this Court should presume that Congress acted against the backdrop of the bars on executive review of judicial decisions and on advisory opinions, and thus, in creating the CEQ, did not give that agency power that collides with those critical separation of powers limitations. *See United States v. X-Citement Video, Inc.*, 513 U.S. 64, 73 (1994) ("We do not impute an intent of Congress to pass legislation that is inconsistent with the Constitution.").

Procedure Act ("APA"), modify a regulation on which an injunction is based and thereby work a modification of the injunction. Under that scenario, where the injunction itself was predicated on an agency regulation, the agency's change in the regulation resulting in a corresponding change to the injunction might be akin to a congressional change in legislation resulting in a corresponding change to an injunction of the sort upheld in *Wheeling & Belmont Bridge*. Here, however, the district court's injunction was not based on a regulation; it was based on a statute (NEPA). And, in any event, CEQ did not comply with APA requirements when issuing its quasi-judicial administrative ruling. Resp. Br. 37-38.

CONCLUSION

For the foregoing reasons, the judgment of the court of appeals should be affirmed.

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AMICUS CURIAE BRIEF

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IN THE

Supreme Court of the United States

DONALD C. WINTER,
SECRETARY OF THE NAVY, ET AL.,

Petitioners,

v.

NATIONAL RESOURCES DEFENSE COUNCIL, INC., ET AL.,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

AMICI CURIAE BRIEF OF LAW PROFESSORS MICHAEL C. SMALL, JONATHAN D. VARAT, AND ADAM WINKLER IN SUPPORT OF RESPONDENTS

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INTRODUCTION AND INTERESTS OF *AMICUS CURIAE*

In the case below, the district court and the Ninth Circuit both determined that the U.S. Navy had likely violated the National Environmental Policy Act (NEPA) by failing to issue an environmental impact statement for its ongoing training exercises off the Southern California coast. The courts agreed with the Navy's own environmental assessment that its use of mid-frequency active sonar would irreparably harm various whale species. On that basis, the district court issued—and the Ninth Circuit affirmed—a carefully tailored injunction that allowed the training exercises to continue using appropriate mitigation measures while the Navy conducted its environmental impact statement. Because the Ninth Circuit's decision is based on sound science and policy, it should be affirmed.

The Ecological Society of America (ESA) is an organization of over 10,000 scientists founded in 1915 to promote ecological science by improving communication among ecologists, raising the public's level of awareness of the importance of ecological science, increasing the resources available for the conduct of ecological science, and ensuring the appropriate use of ecological science in environmental decisionmaking by enhancing communication between the ecological community and policy-makers.[1] Ecology is the scien-

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[1] The parties have consented to the filing of this brief. Under Rule 37.6, ESA states that no counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than *Amicus*, its members, or its counsel made a monetary contribution to preparation or submission of this brief.

tific discipline that is concerned with the relationships between organisms and their past, present, and future environments. ESA has published a suite of publications, from peer-reviewed journals to newsletters, fact sheets and teaching resources, among them the scientific journal *Ecology*, since 1920. ESA's Aquatic Ecology Section is its largest section.

As a scientific organization engaged in a range of scientific disciplines relating to the ecology of our planet and devoted to the study and effective management of ocean ecosystems and of the species that inhabit them, ESA has grave concerns about the health, survival, and sustainability of marine mammal species in the face of human activity, including the Navy's use of mid-frequency active (MFA) sonar during training programs. ESA's members conduct research, teach, and use ecological science to address environmental issues that include biotechnology, natural resource management, ecological restoration, ozone depletion, global climate change, ecosystem management, species extinction and loss of biological diversity, habitat alteration and destruction, and sustainable ecological systems.

ESA has special knowledge on the scientific issues before this Court, including the physiology, behavior, and habitat of marine mammal species and the effects of MFA sonar on those species and the marine ecology. This scientific expertise enables ESA to explain the biological and ecological consequences of underwater noise, including MFA sonar, on marine mammals. Understanding these consequences is necessary to appreciate fully the substantial effects of MFA sonar on marine mammal mortality, behavior, and reproduction, and therefore why the courts below

properly issued an injunction to reduce the probability of substantial harm to the marine environment.

ESA supports the use of the best available scientific information in making decisions that affect marine resources, including marine mammal species.

SUMMARY OF ARGUMENT

The courts below properly applied traditional equitable principles in issuing an injunction tailored to prevent irreparable environmental harm while petitioners ("petitioners," or "the Navy") comply with the National Environmental Policy Act (NEPA) and complete an environmental impact statement.

I. Scientific evidence supports the injunction. The peer-reviewed, published literature has led scientists to conclude that "compelling evidence" links military sonar to death and injury in marine mammals.

The Navy, too, admits the connection but downplays the effects of sonar on cetacean populations. But the scientific evidence leaves no room for doubt: mid-frequency active (MFA) sonar harms cetaceans through direct acoustic trauma, through behavior modifications or other effects that make whales vulnerable to gas emboli; through adverse effects on the animals' ability to communicate, forage, avoid predators, and breed; and through "ripple effects" that affect the marine ecology and other marine species in ways potentially disproportionate to the harm experienced by the mammals themselves. Accordingly, the courts below were well on target in concluding that plaintiffs here established, to a "near certainty," that the Navy's use of MFA sonar in training exercises would cause irreparable harm.

II. There is no requirement that plaintiffs demonstrate species-level harm to obtain an injunction. Rather, looking to the statutory purpose of NEPA, injunctive relief is available to remedy environmental harm that results from uninformed agency action. See *Marsh* v. *Oregon Natural Res. Council*, 490 U.S. 360, 371 (1989) (NEPA's "manifest concern [is] preventing uninformed action"; its purpose is to preclude agencies from acting on an incomplete record). The environmental injury stemming from a NEPA violation is irreparable when agency action reaches a tipping point, when investment in and commitment to the project is too advanced for an environmental impact statement to make a difference in the agency's choices.

Moreover, even if plaintiffs had to show irreparable injury to their memberships, such harm does not need to be at the species level to warrant injunctive relief. The irreparable injury inquiry focuses on whether the injury has an adequate legal remedy. Environmental injury will usually meet this standard. See *Amoco Prod. Co.* v. *Village of Gambell*, 480 U.S. 531, 545 (1987) ("Environmental injury * * * can seldom be adequately remedied by money damages and is often permanent or at least of long duration, *i.e.*, irreparable."). And here the district court concluded that the evidence demonstrated "to a near certainty" that MFA sonar would cause irreparable harm to the environment and to Plaintiffs' standing declarants. *Natural Res. Def. Council* v. *Winter*, 530 F. Supp. 2d 1110, 1118 (C.D. Cal. 2008).

In addition, harm to marine mammals, even at less than a population level, can have cascading ecological effects because of the key place these mammals occupy in their environment. Similarly,

the aesthetic harm that plaintiffs themselves would suffer—loss of opportunity to view, study, and appreciate animals—has no adequate legal remedy and is sufficient to warrant injunctive relief.

III. Policy considerations and legal precedents both support preserving courts' authority to grant tailored injunctions to remedy NEPA violations. It is the courts' role to rigorously enforce NEPA's requirements. Without the means to do so—including injunctions when appropriate—NEPA would be rendered ineffective not just as to the procedural obligations it imposes but also as to the "significant substantive goals" that this Court has recognized that NEPA embodies. *Vermont Yankee Nuclear Power Corp.* v. *Natural Res. Def. Council*, 435 U.S. 519, 558 (1978). Without the threat that agency action might be enjoined, courts' NEPA-enforcement function would be toothless, and agencies would have no incentive to comply with NEPA or prepare an environmental impact statement.

Moreover, this Court's decisions involving procedural violations of environmental statutes—along with decades of NEPA cases—confirm that courts must use traditional equitable principles in enjoining NEPA violations. In case after case, this authority has included the flexibility to craft injunctions that prevent environmental harm while permitting some agency action to continue.

ARGUMENT

I. The Scientific Evidence Shows, To A Near Certainty, That MFA Sonar Will Harm Marine Mammals.

The scientific evidence from peer-reviewed studies strongly indicates that mid-frequency active sonar

harms cetaceans through a range of impacts, from direct acoustic trauma to behavioral disruption.

A. Cetaceans Are Harmed By Mid-Frequency Active Sonar.

Scientific evidence indicates an "overwhelming" correlation between the use of MFA sonar and the strandings and injury of cetaceans, particularly beaked whales. J.A. 614, 735. Beaked whales have repeatedly been found beached at the same time and place as naval exercises using mid-frequency sonar. S.E.R. 80-82, 108, 223; E.C.M. Parsons *et al.*, *Navy Sonar and Cetaceans*, 56 Marine Pollution Bull. 1248, 1249 (2008). Although many whales were found stranded on shore, this likely represents the tip of the iceberg, since dead and dying whales only rarely come ashore. *Ibid.*; S.E.R.2 at 90; S.E.R. 396, 400, 405.

The connection between MFA and injuries to whales was first made in May 1996, when at least twelve Cuvier's beaked whales stranded themselves along 40 miles of the Greek coast and died. J.A. 691. Researchers discovered that the strandings coincided with NATO naval exercises, which tested low- and mid-frequency sonar systems in the same time and place as the strandings. *Id.* at 694. By carefully examining potential causes of the deaths, one peer-reviewed study calculated that the probability of the stranding occurring for a reason other than the sonar tests was less than 0.07%. A. Frantzis, *Does Acoustic Testing Strand Whales?*, 392 Nature 29 (Mar. 5, 1998). Since that event biologists have catalogued a growing list of such events coinciding with naval exercises using sonar, including the Bahamas, the Canary Islands, Madeira, Spain, and numerous other

locations. Parsons, *supra*, at 1248-1250; J.A. 98, 617, 637, 652-656, 717-724, 756-779.

Having established the connection between sonar use and cetacean injury and death, scientists began seeking the cause. One possibility was direct auditory trauma from sonar at decibel levels far higher than whales could withstand. S.E.R. 86-87. Necropsies on the beaked whales killed in the Bahamas and Madeira showed bleeding in the brain, ears, and eyes, which was "consistent with auditory trauma." S.E.R. 183. This would explain certain of the injuries of cetaceans close to the sonar source, but given the types of pathologies observed in the animals and the whales' probable location and distribution, it did not provide the full explanation. Sound levels of the Navy's sonar in the Bahamas—which years of baseline study had established as Cuvier's beaked whale habitat—did not exceed 170 decibels. S.E.R.2 at 227; J.A. 581, 734. This level of sound was far lower than that estimated to cause even temporary hearing loss in these animals, and far lower than the 235 decibels or more that the Navy is currently using off Southern California. J.A. 734.

Necropsies and tissue analyses of whales stranded in the Canary Islands, and later in other sonar-related stranding events, provided another mechanism for cetacean injuries and deaths. S.E.R. 108; J.A. 667. In addition to finding similar hemorrhaging, investigators also found fat and gas bubbles throughout the blood vessels, liver, kidneys, and other organs. *Ibid.* These bubbles spread through the body via the circulatory system, acting as emboli that likely blocked blood vessels and impaired organ function, leading to death. *Ibid.* The gas bubbles and other pathologies resembled those seen in cases of de-

compression illness—or the "bends"—in humans. Parsons, *supra*, at 1250; J.A. 669. If severe, as they were in the case of the beaked whales, these emboli can cause extreme pain, disorientation, and even death. S.E.R.2 at 842.

Beaked whales and other deep-water species may be particularly susceptible to these pathologies because of their extraordinary diving behavior. Beaked whales "on average dive deeper and longer than reported for any air-breathing animal that dives to forage." Peter L. Tyack *et al.*, *Extreme Diving of Beaked Whales*, 209 J. Experimental Bio. 4238, 4239-4240 (2006). Cuvier's beaked whales make extremely deep foraging dives of more than 1500 meters that can last as long as 1.5 hours. *Id.* at 4241. After each lengthy foraging dive, the whales conduct a series of more shallow "bounce" dives of less than 500 meters. *Id.* at 4246. Other beaked whale species studied to date have similar dive profiles, although they do not dive quite as deep. Several peer-reviewed studies indicate that the most plausible mechanism of harm is a disruption of whale diving behavior, causing the animals either to surface too rapidly or to alter their shallow dive cycles. *Id.* at 4251; Parsons, *supra*, at 1250; J.A. 659; S.E.R. 239; Walter M.X. Zimmer & Peter L. Tyack, *Repetitive Shallow Dives Pose Decompression Risk in Deep-Diving Beaked Whales*, 23(4) Marine Mammal Sci. 888, 917 (2007). Regardless of the precise mechanism of harm, it is established that mid-frequency active sonar can injure whales at sea. J.A. 602; 655-656, 666; 757.

Additionally, as the Navy indicated in its Environmental Assessment, its training exercises are likely to significantly disturb or injure large numbers of animals. Pygmy sperm whales, for example, are

considered rare off the west coast, with an estimated minimum population of only 119 individual animals. E.R 341. However, the Navy predicted more than 900 annual "takes" for this species, including 56 cases of temporary hearing loss. J.A. 223. Although some individual animals will be exposed more often than others, on average each pygmy sperm whale will be significantly affected as many as 7.5 times each year by the Navy's actions, according to the Navy's own projections, with hearing loss occurring in as much as half of the entire population each year.

It is also established that sonar can significantly alter the behavior of whales. The peer-reviewed literature shows significant behavioral responses even at exposure levels far below the threshold for significant injurious harm in the Navy's Environmental Assessment. See *Ocean Mammal Inst.* v. *Gates*, 546 F. Supp. 2d 960, 974 (D. Haw. 2008) (holding that the Navy had failed to properly account for behavioral changes in cetaceans at lower decibel levels); J.A. 360; S.E.R. 242; Parsons, *supra*, at 1251. Biologists report that cetaceans are displaced from areas where sonar is used, affecting their foraging, socializing, and breeding. For example, after at least 16 whales were killed during the Navy's use of sonar in the Bahamas in 2000, investigators who had been conducting long-term studies of the Cuvier's beaked whale population there reported that those whales had disappeared entirely from the area and were not seen again, in any number, for well more than a year. S.E.R. 89. They reported that it was "entirely plausible that most, if not all, of the local population was killed on that day; or, at the very least, there has been a very serious displacement of these whales." *Ibid.* Thus, even in the "best case" scenario (i.e., the

entire population was not killed as a result of sonar use), there occurred a population-level change in the distribution of animals that was extremely biologically significant. Similarly, the use of mid-frequency sonar during military exercises off the coast of Scotland caused a "dramatic and statistically significant" displacement of the local minke whale population. J.A. 582-583. Scientific analysis of whale sighting rates were corroborated by whale-watching and marine tourism operators, who similarly reported the decline. *Ibid.* The whales did not return to the area in the same abundance for at least several weeks. *Ibid.*

Even if whales do not flee the area entirely, they exhibit significant stress responses that interfere with foraging and other behaviors. These responses have been observed both experimentally and opportunistically in a range of species and, appropriately, have been characterized by the National Marine Fisheries Service (NMFS) as "profound." J.A. 360; Small Takes of Marine Mammal Incidental to Specific Activities, 71 Fed. Reg. 38,710, 38,727 (July 7, 2006). For example, a NMFS contract scientist reported that a pod of resident killer whales—an endangered population—exhibited disturbance reactions in response to a single Navy vessel using mid-frequency active sonar at a distance of 47 kilometers, experienced foraging disruption at 22 kilometers, and showed extraordinary aversive behavior at closer ranges. J.A. 473-74. Extraordinary flight responses in Dall's porpoises and minke whales were also observed. *Ibid.* In sum, in addition to direct and indirect injuries, MFA sonar causes biologically significant disruption in cetacean behavior.

B. The Navy Has Mischaracterized The Science And Ignored The Findings Of Its Own Environmental Assessment.

Pursuant to NEPA, the Navy conducted an environmental assessment of its ongoing training exercises. In finding that the exercises would have "no significant impact" on the marine environment, however, the environmental assessment significantly understated the magnitude and the source of the threat to beaked whales and other marine mammals off the California coast from naval sonar. Even so, the Navy has mischaracterized even the limited conclusions of its own environmental assessment, consistently minimizing the admitted threat to marine mammals and overstating the effectiveness of its mitigation measures.

1. With considerable peer-reviewed scientific support, the Environmental Assessment used a lower threshold for beaked whale injury, one tied to behavioral disruption. In keeping with 1994 amendments to the Marine Mammal Protection Act, the Navy defines Level A harassment as "any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild." J.A. 160. Level B harassment is "any act that disturbs or is likely to disturb a marine mammal or marine mammal stock by causing disruption of natural behavioral patterns." *Id.* at 161. Such Level B harassment is by definition significant, including temporary hearing loss and habitat displacement. See 16 U.S.C. § 1362(18)(B)(ii).

However, because of the demonstrated lethal effects of sonar on beaked whales, the Navy defined Level B behavioral harassment as Level A injurious

harassment for beaked whales. J.A. 170. As discussed above (at 7-9), such an approach is well supported by the peer-reviewed literature, which indicates that some species experience injury at lower levels of exposure than estimated to cause hearing loss in marine mammals. On that basis, the Navy calculated 274 Level A harassments, or injuries, per year of beaked whales, including 13 cases of temporary hearing loss.[2] Nevertheless, the Navy now seeks to avoid the conclusions of its own environmental assessment and downplay the injuries predicted there. In doing so, however, the Navy ignores the science that justified categorizing beaked whale harassments as Level A in the first place.

In addition to the injuries estimated by the Navy's environmental assessment, each of the estimated 274 beaked whale harassments per year represents the potential of serious debilitation or death. The literature indicates that the pathologies observed in these species are known, in other species, to have the ability to cause systemic dysfunction and mortality. S.E.R.2 at 842. The Navy's environmental assessment inappropriately dismissed this demonstrable potential for mortality. The total minimum population size of Cuvier's beaked whales off the entire American west coast is estimated to be only 1,121 animals. See J.A. 185; James V. Carretta et al., *U.S. Pacific Marine Mammal Stock Assessments: 2006* at 150 (2007). The Navy estimates, however, that

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[2] This included four injurious harassments of Baird's beaked whales (see J.A. 179), 218 harassments of Cuvier's beaked whales, including 10 cases of temporary hearing loss (*id.* 186), and 52 harassments of unspecified Ziphiid Beaked whales, including three cases of temporary hearing loss (*id.* 199).

218 of these whales will annually be injured by the sonar, representing as much as 20% of the entire stock for each of the Navy's two years of exercises. Although it is unlikely that all will suffer lethal harm (beyond the injury already estimated by the environmental assessment), the Navy cannot simply conclude that *no* such harm will occur to these animals or to the stock, given the high number of exposures and the vulnerability of beaked whale species. Regardless, the injuries estimated by the environmental assessment will adversely affect beaked whales at a population level.

2. The Navy asserts harm to only eight common dolphins, but even those dolphins, the Navy confidently claims, will be protected by its mitigation measures. Br. 10; J.A. 184. The environmental assessment consistently—but mistakenly—assumes that the Navy will be able to mitigate the effects of the sonar and thereby minimize the exposure of marine mammals, including beaked whales.[3] See, *e.g.*, J.A. 186 ("Mitigation measures * * * would further reduce the potential for any effect on Cuvier's beaked whales."). The Navy claims to have implemented a series of 29 different mitigations measures to ensure that cetaceans will not be harmed. See Br. 7. This claim is misleading. As the courts found below, many

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[3] The National Marine Fisheries Service unquestioningly adopts this assumption as well in its cursory memorandum supporting the CEQ's emergency exemption for the naval exercise. App. 250a. Although it admits that beaked whales "appear to be particularly susceptible to injury" from sonar, it concluded that "the mitigation measures employed during the exercises will minimize that risk." *Id.* at 257a-258a. It did not, however, indicate how mitigation efforts based on ineffective visual scanning for whales could protect beaked whales.

of the purportedly discrete mitigation measures are merely different aspects of the same requirement. For example, a full 13 of the measures can be summed up in the single requirement that lookouts and officers should, after sufficient training, scan the horizons using binoculars and night-vision equipment. J.A. 203-211. Several of the remainder involve procedures for reporting sightings of marine mammals. *Ibid.* Other measures are so qualified that they amount to no restriction at all, such as the requirement that the sonar levels should not exceed 235 decibels "except as required to meet tactical training objectives." *Id.* at 208. Not surprisingly, the district court characterized these mitigation measures as "woefully inadequate and ineffectual." App. 215a.

Even the primary mitigation measure—the reduction of sound levels when marine mammals are detected within certain narrowly defined "safety zones"—will likely protect only a small number of animals. From the rapidly moving ships used by the Navy, lookouts are unlikely to effectively spot cetaceans, particularly beaked whales, which spend the majority of their time at depth. S.E.R. 224. One published estimate indicated that Navy observers have less than a 2% chance of detecting beaked whales with their current monitoring techniques. *Id.* at 225. Even the Navy estimates that it only has a 5% chance in general of visually detecting marine mammals. Taking and Importing Marine Mammals, 66 Fed. Reg. 15,375, 15,380 (Mar. 19, 2001)(to be codified at 50 C.F.R. Part 216). Detection becomes even more difficult in adverse weather and at night. J.A. 592. As a result, the visual monitoring of the ocean surface and the safety zone proposed by the Navy would

likely have little effect in protecting beaked whales and would protect only a small proportion of other species.

In short, the Navy's environmental assessment has underestimated the harm that could come from its training exercises. Even so, the Navy inappropriately denigrates the harm it does estimate will occur in beaked whales and other marine mammals from its use of mid-frequency sonar.

C. The Alleged 40-Year Absence Of Evidence Does Not Indicate That Sonar Use Is Safe For Marine Mammals.

Although the Navy argues (at 3) that it has conducted these exercises for 40 years off the California coast without any sonar-related injuries, this claim is misleading.

Scientists have only recently become aware of the correlation between sonar use and cetacean injuries, so they have not previously sought evidence to explain any possible causation. In other words, because they were not previously looking for such evidence, they did not find it.[4] Moreover, a recent study showed that scientists could overlook even catastrophic declines in some marine mammal populations. S.E.R. 468. In general, wildlife managers primarily measure "direct, human-caused mortalities" of ma-

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[4] NMFS, in its supporting memorandum for CEQ's issuance of an emergency exception, makes this same logical error. It searched a database of beaked whale strandings in California and found none since 1982 that identified Navy sonar as the root cause. App. 256a-257a. This is not surprising given that, until very recently, pathologists would not have performed tissue analyses indicative of sonar-related injury, or indeed would even have known what to look for.

rine mammal populations, focusing on easily observable harms such as bycatch in commercial fisheries. *Ibid.* When animal populations decline from other, less obvious causes, managers can overlook the decline entirely, even when populations decline precipitously. *Ibid.* In fact, the study found that "the likelihood of *not* detecting a precipitous decline is quite high." *Id.* at 161. This problem is particularly acute for beaked whales, which spend much of their time at great depths, but it applies to most other cetacean species off southern California as well. *Id.* at 160. The study estimated that in 90% of beaked whales stocks, including all of those off southern California, a precipitous decline of 50% over 15 years would likely pass unnoticed by scientists. *Id.* at 162.

Moreover, beaching events likely represent only a fraction of the actual injuries to cetaceans from the Navy's use of sonar. Dead and dying whales typically do not wind up on beaches where people can find them; if they did, the world's beaches would be littered with whale carcasses. Generally with wild populations, only a small percentage of carcasses are ever found by investigators. See Gary Wobeser, *Investigation and Management of Disease in Wild Animals* 14 (1994). Indeed, it is "widely accepted" that "the discovery of a single body should always be considered indicative of a wider problem." Parsons, *supra*, at 1249. This problem is particularly acute in marine environments, where carcasses typically either sink to the ocean floor or are consumed by predators. See *ibid*; S.E.R. 2 at 90. Even if carcasses do wash ashore, they are often not found. As a result, the fact that no carcasses have washed ashore in southern California does not at all indicate that sonar has not injured or killed cetaceans there.

The district court rejected as a factual matter the Navy's claim that the absence of evidence meant that no harm had occurred in previous exercises. See *Natural Res. Def. Council* v. *Winter*, 2007 WL 2481037, at *4-5 (C.D. Cal. Aug. 7, 2007). It pointed to NOAA's stock assessments, which explained that "'[s]uch injuries or mortalities [from anthropogenic noise] would *rarely be documented*, due to the remote nature of many of these activities and the low probability that an injured or dead beaked whale would strand.'" *Id.* at *4 (quoting J.A. 728) (emphasis added by district court). It also pointed to the Navy's own environmental assessment, which concluded that the SOCAL exercises would result in 170,000 annual Level B takes and 466 cases of permanent injury. *Id.* at *5. The district court's finding is well supported and is entitled to deference.

II. The Navy's "Species-Level Harm" Standard Is Both Legally And Scientifically Inaccurate.

Neither the law nor science supports the Navy's argument that an injunction may only issue upon a showing of a likelihood of irreparable harm to the "species as a whole." Br. at 43-44.

A. Under NEPA, Irreparable Harm Is Environmental Injury Resulting From Uninformed Agency Action.

In enacting NEPA, Congress aimed to prevent decisionmakers from "act[ing] on incomplete information." See *Marsh* v. *Oregon Natural Res. Council*, 490 U.S. 360, 371 (1989). Under NEPA, therefore, the injury is uninformed agency action. See *ibid.* (NEPA's "manifest concern [is] preventing uninformed action."). The NEPA violation is an envi-

ronmental injury—of a potentially irreparable nature—that is more than merely procedural harm. See *Sierra Club* v. *Marsh*, 872 F.2d 497, 500-04 (1st Cir. 1989) ("[T]he harm at stake in a NEPA violation *is* a harm to the *environment*, not merely to a legalistic 'procedure.'") (Breyer, J.).

That harm becomes irreparable when agency action reaches a point of no return. Both courts and commentators have recognized that an injunction should issue if the "threatened harm would impair the court's ability to grant an effective remedy" later. 11A Charles Wright *et al.*, *Federal Practice & Procedure* § 2948.1, at 145-149 (2d ed. 1995). The same is true under NEPA. See William H. Rodgers, Jr., *Environmental Law* § 7.7, at 767 (1977) (NEPA's "purpose is to require consideration of environmental factors before project momentum is irresistible, before options are closed, and before agency commitments are set in concrete."); *Nat'l Audubon Soc'y* v. *Dep't of the Navy*, 422 F.3d 174, 201 (4th Cir. 2005) (injunction may be necessary to prevent actions that have an adverse environmental impact or limit agency's choice of reasonable alternatives); *N. Slope Borough* v. *Andrus*, 486 F. Supp. 326, 331 (D.D.C. 1979) (if injunction is not necessary "to preserve the decision-making process" should plaintiff ultimately prevail, "any harm to that process is not irreparable"); see also *infra* Section III. "Injunctive relief preserves an agency's ability and propensity to change its course, thus implementing NEPA's mandate that agencies fully consider all environmental impacts before making decisions." Leslye A. Herrmann, *Injunctions for NEPA Violations: Balancing the Equities*, 59 U. Chi. L. Rev. 1263, 1289 (1992).

B. Irreparable Harm To Plaintiffs Does Not Require Injury To The "Species As A Whole."

Even if plaintiffs had to show irreparable injury to their membership, such harm does not need to be at the species level to warrant injunctive relief. The irreparable injury inquiry "does not focus on the significance of the injury, but rather, whether the injury, irrespective of its gravity, is *irreparable*—that is, whether there is any adequate remedy at law." *Sierra Club* v. *Martin*, 933 F. Supp. 1559, 1570-71 (N.D. Ga. 1996), *rev'd on other grounds*, 110 F.3d 1551 (11th Cir. 1997); see also *Nat'l Audubon Soc'y*, 422 F.3d at 201 (recognizing inadequate remedy as touchstone of irreparable environmental injury). This Court has recognized as much, stating that that environmental injury is nearly always irreparable because of the lack of adequate legal remedy:

> Environmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, *i.e.*, irreparable. If such injury is sufficiently likely, therefore, the balance of harms will usually favor the issuance of an injunction to protect the environment.

Amoco Prod. Co. v. Village of Gambell, 480 U.S. 531, 545 (1987); see also Herrmann, *supra*, at 1276.

Indeed, agency action may have profound and irreparable ecological injury without necessarily harming a particular species at a population level. This is true, for example, of so-called "keystone species," which is a species whose effect "on its community or ecosystem is large, and disproportion-

ately large relative to its abundance." Mary E. Power *et al.*, *Challenges in the Quest for Keystones*, 46(8) Bioscience 609, 609 (Sept. 1996). Many cetaceans have been identified as keystone species. *E.g.*, *id.* at 612 (identifying baleen whales as keystone species for pelagic and other waters, and gray whales for soft sediment marine habitat); *Whales, Whaling, and Ocean Ecosystems* 381, 383 (James A. Estes *et al.* eds., 2007) (identifying killer whales and sperm whales as likely keystone species); Simone Libralato *et al.*, *A Method for Identifying Keystone Species in Food Web Models*, 195 Ecological Modeling 153, 164 (2006) (listing "toothed whales"—which include beaked whale and dolphin families—as keystone in the eastern tropic Pacific ecology). These species have a structural role within ecosystems such that their activities "strongly influence the abundance of other species and the ecosystem dynamic." Libralato, *supra*, at 153, 154. Thus even small changes in numbers or behavior of keystone species can have large "ripple effects" on other marine species and the marine ecology. See Power, *supra*, at 617. Because these ecological ripple effects often take time to manifest themselves, looking only at the short-term disturbance will often lead to the misleading impression that the effects of agency action are minimal even as to the keystone species, *e.g.*, Lars Bejder *et al.*, *Decline in Relative Abundance of Bottlenose Dolphins Exposed to Long-Term Disturbance*, 20(6) Conservation Biology 1791, 1792 (2006), *let alone* to the ecosystem.

Moreover, courts have recognized irreparable harm to *plaintiffs'* interests wholly separate from the scope of environmental harm to the species they enjoy. These aesthetic injuries—loss of opportunity to

view, interact with, study, and appreciate animals—have no adequate legal remedy and are sufficient to warrant injunctive relief in appropriate cases. See, *e.g.*, *Nat'l Audubon Soc'y*, 422 F.3d at 183 (irreparable harm to birdwatchers where actions could "reduce [bird] feeding and resting times, alter [bird] behavior, hinder their migration, and decrease their populations"); *Fund for Animals* v. *Norton*, 281 F. Supp. 2d 209, 220-22 (D.D.C. 2003); *Anglers of the Au Sable* v. *U.S. Forest Serv.*, 402 F. Supp. 2d 826, 837 (E.D. Mich. 2005) (irreparable harm in loss of peace-and-quiet enjoyment, alteration of wildlife patterns, change in predator-prey relationship; disturbing of habitat, loss of recreational opportunities).

C. The Scientific Evidence Shows That Use of MFA Sonar Will Result in Species-Level Harm.

The serious effects of sonar on marine mammals are well-documented in the record and in Respondents' Brief. These effects include death;[5] physical trauma—including hemorrhaging around the brain, ears, kidneys, and acoustic fats and gas/fat emboli in vital organs[6]—which can cause dysfunction of key bodily functions, respiratory distress, disorientation, and death;[7] habitat displacement, hearing loss, and "profound" adverse behavioral modification, including

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[5] J.A. 666-705, 717-23, 730-31, 735, 737-446 (published scientific studies and reports of mass strandings); J.A. 756-79; 07-56157 C.A. S.E.R. ("S.E.R.") 180-90 (Navy documents and reports of mass strandings).

[6] J.A. 600-02, 673-89, 738-41, 760; S.E.R. 180.

[7] J.A. 601, 666-67, 674-76, 680, 685.

in feeding, diving, and social interaction;[8] and sharp declines in, with no short-term rebound of, visual observation.[9] The Navy's own evidence indicates that these effects are significant on a population level.

For example, the Navy estimated that use of MFA sonar in the SOCAL exercises would result in 436 "Level A" exposures—defined as exposure that "injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild," including through permanent hearing loss and cranial hemorrhaging, J.A. 160-61—in Cuvier's beaked whales, which represents as much as one-third of the entire west-coast stock of that species. J.A. 223-24; S.E.R.2 926-27; App. 19a. The Navy's predicted number of "Level B" exposures—about 170,000—is not just large on its own, it is huge relative to the size of cetacean populations off Southern California. J.A. 223-24. When considered species-by-species, the environmental assessment's numbers take on added significance: 900 annual estimated takes of as few as 119 pygmy sperm whales; takes of as much as 25 percent of the eastern Pacific population of endangered blue whales; and takes of 15 to 20 percent of five distinct dolphin populations. J.A. 223-24; E.R. 341-43; App. 65a-66a.[10]

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[8] J.A. 360-62, 474; 71 Fed. Reg. 38,710, 38,727 (July 7, 2006).

[9] J.A. 473-74, 582-83, 590-91, 822; S.E.R.2 232-33. J.A. 644, 656, 701.

[10] Nevertheless, there is no requirement—and the Navy points to none—that agency action threaten or jeopardize the continued existence of an entire species to demonstrate irreparable harm, even if injury to "species as a whole" is the standard.

These "Level B" behavioral takes are more than minor irritation to marine mammals. They are, by definition, biologically significant. NMFS defines "behavioral (Level B) harassment * * * as a significant disturbance in a biologically important behavior (also referred to as a biologically significant response)." Taking and Importing Marine Mammals, 72 Fed. Reg. 37,404 , 37,409 (July 9, 2007) (to be codified at 50 C.F.R. 216). The Marine Mammal Protection Act defines "harassment" to includes actions that "caus[e] disruption of natural behavioral patterns including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering where such behavioral patterns are abandoned or significantly altered." 16 U.S.C. § 1362(18)(B)(ii).

Not surprisingly, the sonar-induced disruption or disturbance of such critical behavior—which NMFS has acknowledged can be "profound," 71 Fed. Reg. 38,710, 38,727 (July 7, 2006)—can have serious consequences on marine mammal populations due to its adverse effect on the animals' ability to communicate, forage, avoid predators, and breed. *E.g.*, J.A. 582-84 (describing wide-scale displacement and decrease in abundance of cetaceans off Scottish coast coinciding with Royal Navy exercises using active acoustics, and concluding that such displacement would have population-level effects if occurring during seasonal breeding or foraging periods). Again, NMFS acknowledged this in its own Biological Opinion, which stated that acoustic exposures can result in the death of marine mammals by impairing their ability to forage, to detect predators, or to communicate. See E.R. 849; see also 71 Fed. Reg. at 38,727 (stating MFA exposure levels "to which animals have demonstrated profound behavioral disturbance," and identifying

Level B harassment from MFA sonar, by definition affecting biologically important behaviors such as foraging or breeding).

III. Restriction Of The Court's Equitable Powers Would Have Adverse Policy Implications And Has No Support In The Law.

Policy considerations, practical concerns, and decades of jurisprudence dictate that district courts have the authority to use traditional equitable principles in crafting appropriate injunctions to remedy NEPA violations.

A. NEPA, and Courts' Rigorous Enforcement of Its Requirements, Advances Goals of Environmental Protection.

This Court has previously acknowledged that NEPA sets forth "significant substantive goals for the Nation." *Vermont Yankee Nuclear Power Corp.* v. *Natural Res. Def. Council*, 435 U.S. 519, 558 (1978). "[R]ecognizing the profound impact of man's activity on the interrelations of all components of the natural environment," NEPA established a broad national commitment to protecting and promoting environmental quality. 42 U.S.C. § 4331. In passing the Act, Congress declared it the policy of the federal government "to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans." 42 U.S.C. § 4331; see also 42 U.S.C. § 4321 (NEPA designed "to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man"). Implementing regulations thus require federal agencies to "[u]se all practicable means, consistent with the

requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment." 40 C.F.R. § 1500.2(f).

"Congress recognized, however, that these desired goals could be incorporated into the everyday functioning of the Federal Government only with great difficulty." *Andrus* v. *Sierra Club*, 442 U.S. 347, 349-350 (1979) (citing S. Rep. No. 91-296, at 19 (1969)). To ensure that its broad national commitment is "infused into the ongoing programs and actions of the Federal Government," 115 Cong. Rec. 40,416 (remarks of Sen. Jackson), NEPA requires (among other things) that federal agencies contemplating major action prepare and publish an environmental impact statement. See 42 U.S.C. § 4332; see also *Kleppe* v. *Sierra Club*, 427 U.S. 390, 409 & n.18 (1976). This statutory requirement is the mechanism to promote the policies, purposes, and commitments that the statute embodies. See *Kleppe*, 427 U.S. at 409 ("By requiring [an environmental impact statement] Congress intended to assure such consideration [of environmental effects] during the development of a proposal."); see also 40 C.F.R. § 1500.1(a) (NEPA "establishes policy, sets goals ([42 U.S.C. § 4331]), and provides means ([42 U.S.C. § 4332]) for carrying out the policy. Section [4332(2)] contains 'action-forcing' provisions to make sure that federal agencies act according to the letter and spirit of the Act.").

Courts are an important part of this process. See 40 C.F.R. § 1500.1(a) ("The President, the federal agencies, and the courts share responsibility for enforcing the Act so as to achieve the substantive

requirements of [42 U.S.C. § 4332]."). It is the court's role to ensure that the agency has taken a "hard look" at the environmental consequences of its action, *Kleppe*, 427 U.S. at 410 n.21 (quoting *Natural Res. Def. Council* v. *Morton*, 458 F.2d 827, 838 (D.C. Cir. 1972)), and, if it hasn't, to exercise its equitable powers in granting appropriate relief, *Potomac Alliance* v. *U.S. Nuclear Regulatory Comm'n*, 682 F.2d 1030, 1035 n.21 (D.C. Cir. 1982) (per curiam) ("This circuit has long held that courts must exercise heightened scrutiny of agencies' compliance with NEPA's procedures."); *Calvert Cliffs' Coordinating Comm., Inc.* v. *U.S. Atomic Energy Comm'n*, 449 F.2d 1109, 1114 (D.C. Cir. 1971) ("Congress did not intend the Act to be such a paper tiger. Indeed, [its requirements set] a high standard for the agencies, a standard which must be rigorously enforced by the reviewing courts.").

Here, the Navy and its *amici* urge the Court to restrict lower courts' equitable powers to remedy NEPA violations. As shown below, such a rule would not just undermine the policies and goals that NEPA was intended to advance, it would also be contrary to decades of jurisprudence.

B. Restricting the Power to Enjoin NEPA Violations Would Have Adverse Policy Implications.

Without a mechanism to enforce the procedural obligations NEPA imposes, its "significant substantive goals" will be illusory. "[T]he preliminary injunction * * * is the vehicle by which a declared congressional policy can be effectuated." *Envtl. Def. Fund* v. *TVA*, 468 F.2d 1164, 1184 (6th Cir. 1972). Importantly, any such enforcement mechanism must

include the power, in appropriate cases, to issue an injunction prohibiting further action until the agency satisfies the statute's obligations.

NEPA is designed and structured to put critical environmental information in decisionmakers' hands *before* they take action. See 40 C.F.R. § 1500.1(b) ("NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken."); see also *Marsh*, 490 U.S. at 371. The environmental impact statement that NEPA requires "is the outward sign that environmental values and consequences have been considered during the planning stage of agency actions." *Andrus*, 442 U.S. at 350. It is intended to provide decisionmakers with information needed to consider effects on the environment, *Calvert Cliffs'*, 449 F.2d at 1114, not to serve as post hoc rationalization of decisions already made, *Jones* v. *District of Columbia Redev. Land Agency*, 499 F.2d 502, 511 (D.C. Cir. 1974). "NEPA logically assumes that increased study, articulation, and public discussion of environmental effects will result in fewer federal decisions that cause harm to the environment." Herrmann, *supra*, at 1271.

Unless such consideration occurs before agency action commences, therefore, it may come at a time when environmental degradation is already underway and opportunities for environmental protection are already lost. See *Andrus*, 442 U.S. at 351. For this reason, regulations require agencies to "integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values." 40 C.F.R. § 1501.2; see also 40 C.F.R. § 1502.5 (environmental impact statement "shall be prepared early enough so that it can

serve practically as an important contribution to the decisionmaking process and will not be used to rationalize or justify decisions already made"). Otherwise, the environmental impact statement becomes pro forma.

By extension, any rule limiting the remedy for a NEPA violation to a mandatory injunction only—requiring compliance with the statute's requirements while agency action continued unabated—would effectively render NEPA a dead letter. NEPA's procedural protections would be nullified if agencies could ignore their obligations and still continue the planned action. *See* John S. Applegate, *National Security and Environmental Protection: The Half-Full Glass*, 26 Ecology L.Q. 350, 369 (1999) ("Procedural approaches to environmental regulation, like NEPA, will fail unless the actions in question receive careful judicial scrutiny and unless there is a credible threat that the activity will be halted if the procedures are not followed."). Allowing agencies to proceed unfettered with projects, investing more and more resources into them, pending completion of an environmental impact statement, "the greater becomes the likelihood that compliance with section 102 of NEPA, and the reconsideration of the project in light of the provisions of section 101, will prove to be merely an empty gesture." *Envtl. Def. Fund* v. *TVA*, 468 F.2d at 1183-84; see also *California* v. *Bergland*, 483 F. Supp. 465, 499 (E.D. Cal. 1980) ("If, having established a violation of NEPA, plaintiffs are not allowed to enjoin further activities until the agency complies with NEPA, then NEPA would be an 'exercise in futility.'") (quoting *Minn. Pub. Int. Res. Group* v. *Butz*, 498 F.2d 1314, 1323 (8th Cir. 1974)), *aff'd in*

part, rev'd in part by California v. *Block*, 690 F.2d 753 (9th Cir. 1982).

Moreover, limiting district courts' traditional equitable powers to remedy NEPA violations may provide a perverse incentive for agencies *not* to comply with the statute. At the very least, curbing district courts' discretion in this way will send the message to agencies that failure to comply will not have consequences, thus "'subvert[ing] the very purpose of the Act and encourag[ing] * * * administrative laxity.'" *Davison* v. *Dep't of Def.*, 560 F. Supp. 1019, 1038 (S.D. Ohio 1982) (quoting *City of New York* v. *United States*, 337 F. Supp. 150, 160 (E.D.N.Y. 1972)). Only the threat of a prohibitory injunction will encourage agency compliance with NEPA:

> Enjoining a particular activity until all environmental factors are properly considered will not only compel agency compliance in that particular case but will also place all agencies on notice that the courts intend to enforce NEPA requirements effectively. The threat of injunction may very well be the only judicial tool that is capable of stimulating agencies to comply with this requirement in every case and not just in those cases where the agency believes the environmental impact will not alter its ultimate decision.

Note, *Program Environmental Impact Statements: Review and Remedies*, 75 Mich. L. Rev. 107, 138 (1976).

C. Decades of NEPA Jurisprudence Support the Full Extent of District Courts' Exercise of Equitable Powers.

Finally, there is no support in the law for restriction of district courts' equitable powers to remedy NEPA violations. For over 30 years, in fact, courts have held that a NEPA violation is subject to traditional standards in equity for injunctive relief. See *N. Cheyenne Tribe* v. *Norton*, 503 F.3d 836, 842 (9th Cir. 2007); *Nat'l Audubon Soc'y*, 422 F.3d at 200; *Envtl. Def. Fund* v. *Marsh*, 651 F.2d 983, 1006 (5th Cir. Unit A 1981) (in NEPA cases, "court should tailor its relief to fit each particular case"); *Davison*, 560 F. Supp. at 1039 ("In deciding whether to stay further agency action until the requirements of NEPA have been met, the courts are guided by traditional principles of equity and injunctive relief."); *City of Romulus* v. *County of Wayne*, 392 F. Supp. 578, 594 (E.D. Mich. 1975) ("general principles of equity are applicable in NEPA cases and these principles will control the Court's discretion"), *vacated as moot*, 634 F.2d 347 (6th Cir. 1980). This Court too has held that courts must apply usual equitable factors in determining the scope of an injunction pending compliance with procedural environmental laws. See *Amoco Prod.*, 480 U.S. at 544 (traditional equitable principles governed court's enforcement of statute establishing procedures for considering adverse effects on subsistence resources before taking federal land use actions); *Weinberger* v. *Romero-Barcelo*, 456 U.S. 305, 311-13 (1982) (relief to enforce statute prohibiting unpermitted discharge of pollutants included but was not limited to an injunction, as statutory scheme contemplated exercise of traditional equitable principles).

These traditional equitable principles give district courts flexibility, within their discretion, in crafting appropriate relief. See *Weinberger*, 456 U.S. at 312 ("[T]he traditional function of equity has been to arrive at a 'nice adjustment and reconciliation' between the competing claims.") (quoting *Hecht Co.* v. *Bowles*, 321 U.S. 321 (1944)). When addressing cases where agency action is underway before completion of or without an adequate environmental impact statement, therefore, courts have recognized that a NEPA injunction "'should be tailored to restrain no more than what is reasonably required to accomplish its ends.'" *Nat'l Audubon Soc'y*, 422 F.3d at 201 (quoting *S.C. Dep't. of Wildlife & Marine Res.* v. *Marsh*, 866 F.2d 97, 100 (4th Cir. 1989)). Specifically, a NEPA injunction predicated on preventing environmental harm should not restrict nonharmful actions, and allowing certain agency actions to continue during the NEPA process does not necessarily create the "option-limiting harm" that NEPA seeks to prevent. *Id.* at 201-202. This flexible approach finds support in NEPA's implementing regulations, which prohibit certain types of actions during the preparation of the environmental impact statement:

> While work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies shall not undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment unless such action:
>
> 1. Is justified independently of the program;

> 2. Is itself accompanied by an adequate environmental impact statement; and
>
> 3. Will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.

40 C.F.R. § 1506.1(c); see also 40 C.F.R. § 1506.1(a) ("Until an agency issues a record of decision * * * , no action concerning the proposal shall be taken which would: [¶] 1. Have an adverse environmental impact; or [¶] 2. Limit the choice of reasonable alternatives."); 40 C.F.R. § 1502.2(f) ("Agencies shall not commit resources prejudicing selection of alternatives before making a final decision.").

It is no surprise, then, that for nearly 40 years courts have been crafting NEPA injunctions that are tailored to the equities of the particular case. See *N. Cheyenne Tribe* v. *Norton*, 503 F.3d 836, 842-44 (9th Cir. 2007) (affirming partial injunction allowing limited coal-bed methane development during additional NEPA analysis); *Nat'l Audubon Soc'y*, 422 F.3d at 201 ("Violation of NEPA is not always cause to enjoin all agency activity while the agency completes the required environmental analysis."); *S.C. Dep't. of Wildlife*, 866 F.2d at 100 ("The scope of the injunctive remedy imposed by the district court was, however, broader than necessary to protect against the environmental risk."); *Envtl. Def. Fund* v. *Marsh*, 651 F.2d at 1005-06; *Alaska* v. *Andrus*, 580 F.2d 465, 485 (D.C. Cir.) ("What is called for, in each case, is a particularized analysis of the violations that have occurred, of the possibilities for relief, and of any countervailing considerations of public interest.") (in-

ternal quotation marks omitted), *vacated in part on other grounds sub nom. W. Oil & Gas Ass'n* v. *Alaska*, 439 U.S. 922 (1978); *Conservation Soc'y of S. Vermont* v. *Sec'y of Transp.*, 508 F.2d 927, 933-34 (2d Cir. 1974), *vacated on other grounds*, 423 U.S. 809 (1975); *Sierra Club* v. *U.S. Fish & Wildlife Serv.*, 235 F. Supp. 2d 1109 (D. Or. 2002) (enjoining manipulation phase, but not data-collection phase, of wildlife predation study because harm justifying injunction was limited to that phase); *Davison*, 560 F. Supp. at 1038-39 (enjoining only nighttime operations of airport when environmental impact statement did not adequately address issue of sleep disruption of nearby population). Sometimes "the equities demand a partial injunction," *N. Cheyenne Tribe*, 503 F.3d at 843, and the courts below were well within their discretion in fashioning an appropriate one here.

* * * * *

In sum, sound policy reasons and decades of decisions enforcing NEPA—including decisions from this Court—compel the conclusion that the lower courts must retain the flexibility, using traditional equitable principles, to enjoin agency actions pending compliance with NEPA's requirements and tailor such injunctions to the facts of each case. There is no support, in policy or the law, to cabin this authority.

CONCLUSION

The decisions below should be affirmed.

Respectfully submitted,

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In The
Supreme Court of the United States

DONALD C. WINTER,
SECRETARY OF THE NAVY, et al.,

Petitioners,

v.

NATURAL RESOURCES
DEFENSE COUNCIL, INC., et al.,

Respondents.

On Writ Of Certiorari To The United States Court Of Appeals For The Ninth Circuit

BRIEF OF THE NAVY LEAGUE OF THE UNITED STATES – HONOLULU COUNCIL, ADMIRAL THOMAS B. HAYWARD, ADMIRAL RONALD J. HAYS, ADMIRAL R.J. "ZAP" ZLATOPER, VICE ADMIRAL PETER M. HEKMAN, VICE ADMIRAL ROBERT K.U. KIHUNE, REAR ADMIRAL RICHARD C. MACKE, REAR ADMIRAL LLOYD "JOE" VASEY, REAR ADMIRAL GEORGE HUCHTING, REAR ADMIRAL STEPHEN R. PIETROPAOLI, THE NAVY LEAGUE OF THE UNITED STATES, MILITARY AFFAIRS COUNCIL OF THE CHAMBER OF COMMERCE OF HAWAII, SOUTHWEST DEFENSE ALLIANCE, SAN DIEGO REGIONAL CHAMBER OF COMMERCE, AND THE SAN DIEGO MILITARY ADVISORY COUNCIL AS *AMICI CURIAE* IN SUPPORT OF THE PETITIONERS

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QUESTION PRESENTED

Because Congress, the Secretaries of Defense, Commerce and the Interior, and the Navy carefully balanced the Navy's need to train realistically, against the putative harm to marine mammals under the national defense exemption to the Marine Mammal Protection Act of 1972, 16 U.S.C. § 1361 *et seq.* (MMPA), did the courts below properly enjoin training exercises until those same issues were addressed under the purely procedural requirements of the National Environmental Policy Act of 1969, 42 U.S.C. § 4321, *et seq.* (NEPA)?

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INTEREST OF *AMICI CURIAE*

Admiral Thomas B. Hayward, Admiral Ronald J. Hays, Admiral R.J. "Zap" Zlatoper, Vice Admiral Peter M. Hekman, Vice Admiral Robert K.U. Kihune, Rear Admiral Richard C. Macke, Admiral Lloyd "Joe" Vasey, Rear Admiral George Huchting, and Rear Admiral Stephen R. Pietropaoli are retired flag-rank naval officers.[1] They understand that "no government interest is more compelling than the security of the Nation." *Haig v. Agee*, 453 U.S. 280, 307 (1981) (citing *Aptheker v. Sec'y of State*, 378 U.S. 500, 509 (1964)). Their collective 319 years of experience on watch defending the Nation at sea has given them unique and valuable insights into the issues in this case and the dangers posed by the Ninth Circuit's decision to the Navy's ability to train realistically with mid-frequency active (MFA) sonar. "Unlike courts, it is the primary business of armies and navies to fight or be ready to fight wars should the occasion arise," *United States* ex rel. *Toth v. Quarles*, 350 U.S. 11, 17 (1955), and these naval warfare experts have served at every

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[1] *Amici* The Navy League of the United States – Honolulu Council, The Navy League of the United States, Military Affairs Council of the Chamber of Commerce of Hawaii, Southwest Defense Alliance, San Diego Regional Chamber of Commerce, and the San Diego Military Advisory Council are organizations supporting the men and women of the naval services and their families. All counsel of record consented to the filing of this brief, and received notice of *amici*'s intention to file this brief at least ten days before it was due. This brief was not authored in any part by counsel for either party, and no person or entity other than *amici* made a monetary contribution toward the preparation or submission of this brief.

level of command, including the very highest positions of responsibility in the Navy under diverse civilian authorities. Congress gave the executive – not the judiciary – the discretion to determine when the defense of the Nation would take precedence over avoiding what has been in this case only the mere *possibility* of harm to marine mammals. *Amici* submit this brief to confirm that the decisions by the President, the Navy, the Secretaries of Defense, Commerce and Interior, the Council for Environmental Quality, and the National Marine Fisheries Service were necessary, and consistent with the sound judgment of naval warfare professionals whose only concern is insuring that the Sailors and Marines tasked with the Nation's seaborne defense are able to train realistically. Under the Ninth Circuit's restrictions, however, the first time a sonar operator can fully use his or her equipment is when it counts and there is no margin for error.

Threats to national security must be evaluated "by those with the necessary expertise." *Dep't of the Navy v. Egan*, 484 U.S. 518, 529 (1988). MFA sonar has been used by the U.S. and other navies for over five decades, and the record in this case, the Ninth Circuit noted, contains "no evidence that marine mammals have been harmed by the use of MFA sonar in the Southern California Operating Area." *Natural Res. Def. Council, Inc. v. Winter*, 518 F.3d 658, 696 (9th Cir. 2008). Those with the "necessary expertise" evaluated the threat and exempted the Navy's use of MFA sonar, but the Ninth Circuit rejected that

expertise and substituted its own judgment for that of experienced naval warfare professionals in how to best train to hunt sophisticated enemy submarines designed to avoid detection.

Guided by decades of command experience, and informed by lifetimes of preparing for and fighting anti-submarine warfare, *amici* urge the Court to understand that the Navy must train as it may fight, and that the decision by the Ninth Circuit unnecessarily puts Sailors, and the Nation they defend, at risk.

I. ADMIRALS AND NAVAL WARFARE PROFESSIONALS

Amici's service includes assignments as Chief of Naval Operations, the senior military officer of the Department of the Navy and a member of the Joint Chiefs of Staff; Commander of the U.S. Pacific Fleet, the world's largest naval force which encompasses half the Earth's surface and includes more than 190 ships, 1,600 aircraft, and 200,000 personnel; Commander of the Pacific Command, a joint services command of all U.S. military forces in the Pacific Theater; Commander of the Seventh Fleet, which is responsible for the Asia-Pacific and the Indian Ocean areas; and command of battle groups and surface ships.

Admiral Thomas B. Hayward, U.S. Navy (Ret.) served as the twenty-first Chief of Naval Operations and a member of the Joint Chiefs of Staff from 1978

to 1982. In his almost 40 years of active duty he also served as the Commander in Chief of the U.S. Pacific Fleet, the Commander of the U.S. Seventh Fleet, deputy chief of Naval Operations-Navy Program Planning, Commandant of the 14th Naval District (Pearl Harbor), Commander of Fleet Air Hawaii, and Commander of the Apollo Space Recovery Forces.

Admiral Ronald J. Hays, U.S. Navy (Ret.) served as the Vice Chief of Naval Operations from 1983 to 1985, and as Commander in Chief of the Pacific Command. A naval surface warfare expert, his 38 years of military service included tours on destroyers, aircraft carriers and sea-going staffs responsible for task force protection.

Admiral R.J. "Zap" Zlatoper, U.S. Navy (Ret.), is also a former Commander in Chief, U.S. Pacific Fleet. A combat-experienced naval aviator with over 4,000 flying hours and 1,000 carrier landings, in addition to numerous operational assignments in his 33 years of service, he also served as the Chief of Naval Personnel, a Battle Group Commander in DESERT STORM and DESERT SHIELD, the Military Assistant to the Secretary of Defense, and the Chief of Staff for the U.S. Seventh Fleet.

Vice Admiral Peter M. Hekman, U.S. Navy (Ret.) is a naval surface warfare expert. In his 40 years of service, Admiral Hekman commanded several surface ships and the Naval Sea Systems Command, the unit responsible for equipping and maintaining naval vessels. He also served as Deputy Director for

Operations, National Military Command Center, Office of the Joint Chiefs of Staff; Commander, Task Force Seventy-Five, U.S. Pacific Fleet; Commander, Cruiser-Destroyer Group One; Deputy Director for Research, Development, Test and Evaluation on the Staff of the Chief of Naval Operations; Deputy Commander for Surface Ship Programs, Naval Sea Systems Command; and as Commander, Naval Sea Systems Command.

Vice Admiral Robert K.U. Kihune, U.S. Navy (Ret.) is the former Commander of the Naval Surface Forces of the U.S. Pacific Fleet and Assistant Chief of Naval Operations for Surface Warfare. In his 35 years of service, Admiral Kihune also commanded two aircraft carrier battle groups – the USS KITTY HAWK and USS NIMITZ – as well as the USS NEW JERSEY battleship group. Among his other significant military assignments were the support for the capture of the terrorists involved in the ACHILLE LAURO hijacking, and Chief of Naval Education and Training responsible for all technical training in the U.S. Navy, including flight training and recruit training.

Rear Admiral Richard C. Macke, U.S. Navy (Ret.) served for more than 35 years, including assignments as Commander in Chief of the Pacific Command, and commander of the aircraft carrier USS DWIGHT D. EISENHOWER, Carrier Group Two, and Carrier Group Four.

Rear Admiral Lloyd "Joe" Vasey, U.S. Navy (Ret.) is an expert on geopolitical strategy and U.S. political-security relations in the Asia-Pacific region, including the security strategy of the People's Republic of China. Admiral Vasey's 36 years of active duty include assignments as chief of strategic plans and policies at U.S. Pacific Command Headquarters, secretary to the U.S. Joint Chiefs of Staff; deputy director of the U.S. National Military Command Center in the Pentagon; and chief of staff for Commander U.S. Seventh Fleet. He founded the Pacific Forum at the Center for Strategic and International Studies in the mid-1970s and served as CEO until 1990. He is the author of several published articles and studies on Asia-Pacific security issues. He presently focuses on assessing the impact of China's defense and foreign policies on regional security.

Rear Admiral George Huchting, U.S. Navy (Ret.) served for more than 36 years as a Surface Warfare Officer commanding both a guided missile destroyer and cruiser. During his last 11 years in the Navy, he served as an Acquisition Professional and as the Program Executive Officer for Aegis Shipbuilding and Combat Systems as well as for all Surface Combatants.

Rear Admiral Stephen R. Pietropaoli, U.S. Navy (Ret.) was the Navy's Chief of Information from 2000 to 2003. His 26 years of naval service included a variety of assignments including the special assistant for public affairs to Army General Hugh Shelton, then chairman of the Joint Chiefs of Staff, head of the Navy's national news desk in the Pentagon, and as

the media relations officer for the Commander of the Atlantic Fleet and the U.S. Atlantic Command. Admiral Pietropaoli began his naval career as a surface warfare officer in the Atlantic Fleet. Currently he is the Executive Director of the Navy League of the United States.

II. MILITARY SUPPORT ORGANIZATIONS

The Navy League of the United States is the leading civilian non-governmental organization whose mission is to support the men and women of the United States sea services, and to ensure they have the equipment and training they need to defend the Nation. The Navy League was founded in 1902 with the encouragement of President Theodore Roosevelt, and membership today stands at over 65,000 nationwide.

The Honolulu Council is a non-profit Hawaii corporation, and operates as a chartered council of the Navy League of the United States. It was incorporated in 1957 and has over 3,500 members, making it the largest council in the world. The Honolulu Council is participating as *amicus curiae* in the pending Ninth Circuit appeal of *Ocean Mammal Inst. v. Gates*, 546 F. Supp. 2d 960 (D. Haw. 2008), a case in which the district court preliminarily enjoined the Navy's use of sonar in Undersea Warfare Exercises around the Hawaiian Islands.

The Military Affairs Council (MAC) of the Chamber of Commerce of Hawaii is a chartered subsidiary

of the Chamber of Commerce of Hawaii, a Hawaii non-profit corporation. In 1985, MAC was established as an unencumbered affiliate of the Chamber to serve as the official liaison for the State of Hawaii in matters relating to the military. Over the years, the Chamber has assumed the role of being the advocate for the military and providing oversight for the multi-billion dollar defense industry that has grown to become the second major source of revenues to Hawaii. The MAC is comprised of representatives from the Chamber and State of Hawaii and City and County of Honolulu administrations, and retired senior military officers.

The Southwest Defense Alliance (SWDA) is a non-profit, non-partisan 501(c)(3) California corporation founded in 1997 to advocate sustaining the critical national security assets in the southwest United States. Elected officials, civic leaders, defense and military experts and others from Arizona, California, New Mexico, Nevada, Texas and Utah voluntarily team to preclude or mitigate encroachment of the irreplaceable land, sea, and air ranges and facilities within and adjacent to the six-state region. The hundreds of civilian participants and volunteers of the SWDA live and work in Arizona, California, New Mexico, Nevada, Texas and Utah. SWDA's members have diverse backgrounds and interests, but share one vision: to sustain a vibrant and supportive environment where the critical defense missions of research, testing and training can be conducted far into the future. To help assure this vision, SWDA

engages in education and advocacy. SWDA is governed by an 18-member board of directors: three directors from each of the six member states, and is managed by a retained executive director.

The San Diego Regional Chamber of Commerce is a 501(c)(6), non-profit California corporation. It notes that a large percentage of the Navy's active surface, air and submarine fleet as well as its Anti-Submarine Warfare and Mine Warfare Commands are located in San Diego and have a huge impact on the region's economy. The Chamber believes it is important for the Navy to continue using active sonar in order to provide effective training to our men and women in uniform. The Chamber further understands that the Navy already undertakes extensive measures to protect marine mammals.

The San Diego Military Advisory Council (SDMAC) is a 501(c)(6) non-profit mutual benefit corporation incorporated under the laws of the state of California. SDMAC currently has over 75 corporate members and 350 individual members in the San Diego region. The SDMAC mission is to help San Diego's military defend the nation. To that end, SDMAC champions the issues that are identified by the military as critical to national defense, the military/industrial team, and to the quality of life of military personnel in the San Diego area. The U.S. Navy's ability to use MFA sonar to adequately train its crews prior to extended deployment in defense of our country is one such issue. SDMAC considers it vital to the defense of our nation that the United

States Navy continue to train its deploying Strike Groups in the use of MFA Sonar. The Navy has consistently demonstrated over a long period of time, their willingness to undertake extensive measures to protect marine mammals and the environment whenever possible. The consequences of sending our young men and women in harm's way without the necessary training to prepare themselves for any eventuality, far outweighs any potential harm to the marine mammal population or the environment.

STATEMENT OF THE CASE

I. THE DIESEL ELECTRIC SUBMARINE THREAT

Submariners use a single term for all surface vessels of any type whether they be naval surface combatants, aircraft carriers, supply ships, merchant marine, or passenger liners: "target."[2] A few submarines can wreak extraordinary damage upon men, material, and international commerce. The threat to Allied supply lines by U-Boats in the Atlantic during World War II – and the damage caused to the enemy by our own submarines in the Pacific – graphically

[2] "Surface combatants" denotes a subset of naval fighting ships. Generally speaking, they are ships built to fight other ships, submarines, or aircraft. Surface combatants include cruisers, destroyers, and frigates, among others. They do not include aircraft carriers, amphibious assault ships, or mine hunters.

brought home the terrifying reality of submarine warfare.

The world's naval forces employ two types of sonar to detect submerged submarines: passive sonar listens for emitted sounds, while active sonar transmits sound and listens for a reflection from the target. Unclassified Declaration of David Yoshihara in Support of Defendants' Opposition to Plaintiffs' Motion for Preliminary Injunction (Yoshihara Dec.) at 5, ¶¶ 9, 10, *Ocean Mammal Inst. v. Gates*, Civ. No. 07-cv-00254-DAE-LEK (D. Haw., Sep. 27, 2007).[3]

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[3] *Available at* http://www.hawaiioceanlaw.com/files/yoshihara dec.pdf. Captain David Yoshihara, U.S. Navy (Ret.) is an expert in anti-submarine warfare (ASW) and currently the Director, Fleet ASW for the Commander, U.S. Pacific Fleet. He was the Director, Task Force ASW on the staff of the Chief of Naval Operations, and was the principal drafter of *Anti-Submarine Warfare Concept of Operations for the 21st Century*, the Navy's vision for how ASW will be conducted in the future, including an examination of the advanced technologies necessary to swiftly defeat the submarine threat wherever it may be found and an examination of the skills Navy personnel will need to effectively conduct ASW. Yoshihara Dec. at 3, ¶ 4.

On May 16, 2007, the Ocean Mammal Institute filed a complaint against the Navy in the district court for the district of Hawaii, seeking declarative and injunctive relief to stop the use of MFA sonar in undersea warfare exercises off the coast of Hawaii. *See Ocean Mammal Inst. v. Gates*, 546 F. Supp. 2d 960, 966 (D. Haw. 2008). The plaintiffs alleged violation of NEPA, the Endangered Species Act of 1973 (ESA), 16 U.S.C. § 1531, *et seq.*, the Coastal Zone Management Act of 1972 (CZMA), 16 U.S.C. § 1451, *et seq.*, and the National Marine Sanctuaries Act (NMSA), 16 U.S.C. § 1431, *et seq*. The district court determined that the Navy violated NEPA and the CZMA, and limited the

(Continued on following page)

Active sonar developed during World War II helped turn the tide against U-Boats and win the war, but still at a terrible cost in ships and personnel.

After World War II, the development of deep diving, indefinitely submerging, and very fast nuclear submarines which could run below the various deep ocean layers hampered active sonar ranging detection of such vessels. Accordingly, the Navy developed a variety of "passive" systems, both shipboard and at the bottom of the sea (the Sound Surveillance System, SOSUS), to detect such vessels by the noise they made in their operation, both from internal machinery and from the cavitation sounds made by their propellers. For every measure, however, there is a countermeasure, and presently, most of the submarines deployed by the world's navies use diesel engines for propulsion while surfaced, and battery-powered electric motors while submerged. Yoshihara Dec. at 4, ¶¶ 6, 7. Diesel electric submarines are uniquely effective in avoiding detection by passive

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Navy's use of MFA sonar. The district court imposed several mitigation measures intended to limit the impact of sonar use on marine mammals, while allowing the Navy to continue training with MFA sonar under narrower circumstances. Many of these mitigation measures are similar to those imposed by the district court and the Ninth Circuit in the case at bar. "The district court's restrictions caused one ship of five in a carrier strike group to deploy to the Far East untrained." Patricia Kime, *Environmental Stewards*, Seapower, July 2008, *available at* http://www.seapower-digital.com/seapower/200807/?pg=39.

sonar: "Modern diesel-electric submarines are designed to suppress emitted noise levels specifically to counter and defeat the best available passive SONAR technology." *Id.* at 5, ¶ 9. "Until at very close ranges, a diesel-electric submarine operating on battery power is nearly undetectable to U.S. and allied naval forces using passive SONAR alone." *Id.* Consequently, diesel electric submarines pose the "primary threat to the U.S. Navy's ability to perform a number of critically necessary missions." *Id.* at 4, ¶ 6.

The threat that these submarines present to the young men and women who man our surface combatants and other ships is not in any sense idle. A single conventional explosive device (torpedo or otherwise) can sink an aircraft carrier with over 4,000 sailors aboard. As for the tactical or strategic nuclear devices these vessels can carry, the definition of "target" expands dramatically from just vessels to entire cities and their surroundings. The only effective countermeasure to such silent threats is the considerably more sophisticated active sonar which the Navy is now developing and putting into effect. The People's Republic of China, North Korea, and Iran have developed or obtained extraordinarily quiet diesel electric submarines which make their detection by passive sonar difficult and, in many cases impossible. *Id.* at 4, ¶ 7 (more than 300 diesel electric submarines are owned by potential adversary nations). *See also* David Lague, *Chinese Submarine Fleet is Growing, Analysts Say*, N.Y. Times, Feb. 25, 2008, *available at* http://www.nytimes.com/2008/02/25/world/asia/25submarine.html

(military analysts report China will surpass the United States in numbers of submarines by the end of the decade and included in those acquisitions are two nuclear powered ballistic missile submarines). China may currently have as many as twelve diesel electric, 636 KILO-class submarines purchased from Russia. *See Kilo-class submarine – People's Liberation Army Navy*, Globalsecurity.org, *available at* http://www.globalsecurity.org/military/world/china/kilo.htm. *See also* Eric Wertheim, *World Navies in Review*, U.S. Naval Institute Proceedings, Mar. 2008, at 15 (China received ten improved KILO-class submarines from Russia and has completed domestic production of SONG class submarines). Iran purchased several 877 KILO-class submarines, an older version of the 636, from Russia in the past and, despite a June 1995 pledge not to enter any new arms contracts with Iran, it is reported that the two countries were engaged in discussions regarding the modernization of the diesel electric submarines operated by the Iranian Army as recently as 2005. *See Project 877 Graney – Project 636 Varshavyanka/Paltus – Kilo class Diesel-Electric Torpedo Submarine*, Globalsecurity.org, *available at* http://www.globalsecurity.org/military/world/russia/877.htm.

The threats from these submarines to the Navy's surface fleet is real. In late 2006 near Okinawa, for example, a SONG-class diesel electric attack submarine of China's People's Liberation Army Navy was not detected by the Kitty Hawk Carrier Strike Group until it surfaced within torpedo range of the aircraft

carrier USS KITTY HAWK. *See U.S. Presses China on Armed Submarine Encounter*, Wash. Times, Jan. 10, 2007, *available at* http://www.washtimes.com/news/2007/jan/10/20070110-112623-9814r/. In November 2007, the Kitty Hawk battle group was "shadowed" by a Chinese submarine and destroyer in the Taiwan Strait prompting a confrontational standoff for twenty-eight hours. *See Report: Chinese Ships Confronted Kitty Hawk*, Navy Times, Jan. 17, 2008 *available at* http://www.navytimes.com/news/2008/01/kyo_china_080115/.

II. TRAINING TO DETECT AND COUNTER THE THREAT

To counter the threat, the Navy has refocused on anti-submarine warfare which is the Pacific Fleet's "#1 warfighting priority." Yoshihara Dec. at 3, ¶ 3. *See also* Otto Kreisher, *As Underwater Threat Re-emerges, Navy Renews Emphasis on ASW*, Seapower, Oct. 2004, *available at* http://www.military.com/NewContent/0,13190,NL_ASW_100404-P1,00.html ("After a decade in the shadows, the Navy has put antisubmarine warfare (ASW) back at the top of its warfighting priorities, injecting new leadership and increased funding into the fight against a re-emerging undersea threat.").

The primary sonar in use by the Navy is MFA sonar, which "yields the greatest probability of detection capability across the spectrum of environments

expected." Yoshihara Dec. at 6, ¶ 10.[4] Use of MFA sonar has "greater potential in assuring more valid and accurate acoustic contacts of a submarine at greater distances than use of passive SONAR alone." *Id.* ¶ 11. Detecting and holding the track of a submarine with MFA sonar is a "very complex task." *Id.* at 6-7, ¶ 12. Navy sonar operators must contend with "water density changes based on temperature, salinity, currents, weather conditions, and the varying profile of the ocean bottom, all of which affect the manner in which sound propagates through water." *Id.* at 7, ¶ 7. Computer simulations cannot substitute for the infinite details and adjustments to the sonar equipment that the dynamic, real-world environment requires of Navy operators. Furthermore, coastal waters are noisier than open ocean waters, making the likelihood of detection with passive sonar alone more difficult. Training in coastal waters, therefore, is vital because interpreting a sonar display is as much art as science, requiring users to distinguish between "echoes" and "reverberation" and between "targets" and "clutter" and "lines" and "blobs." *Id.* at 8, ¶ 16.

The business of war is never a pleasant one. For those charged with the defense of their country, the need to do that job very well – with maximum

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[4] There are three types of active sonar: low frequency, mid-frequency and high frequency. Low frequency equipment is bulky, and high frequency sonar is only effective over a short distance. *Id.* at 5, ¶ 10.

efficiency and effectiveness – is critical not only to ensure victory, but also to do so with the minimum loss of our own Sailors and Marines in a way that, whenever practicable, minimizes damage to the environment. To meet that goal, there is one absolutely critical element every servicemember understands and values above all, and that is training. Discipline is always present in one form or another in a military environment, but without training, that discipline is useless. Sailors and Marines may be ordered into combat and discipline may make them go, but if they have not first been trained to use their equipment effectively, their leaders have breached their duty. Realistic training in the Southern California Operating Area (SOCAL) range and the Hawaii Range Complex (subject of the *Ocean Mammal Institute v. Gates* litigation) with MFA sonar is absolutely necessary. SOCAL has the advantage of sharing the unusual topographical and acoustical conditions found in probable conflict areas, and is close to the home ports of the surface ships undergoing the training. The Hawaii Range Complex is within range of a fleet of submarines which can act as opposing forces.[5]

Training becomes even more critical when utilizing sophisticated systems such as sonar and other

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[5] The December 7, 1941 attack was launched from these very waters. For the *amici* Admirals who served in the Pacific Fleet and at Pearl Harbor, the USS ARIZONA and USS UTAH, both of which remain at rest there, were daily reminders of the need for eternal vigilance and training.

related weapons systems and countermeasures on modern warships and their support vessels. These are not systems which the operator simply switches on like a flashlight in the night. Rather, they are vastly complicated and interdependent systems run by highly intelligent men and women who have spent years preparing to use them and who should not be precluded from training in conditions as close as possible to the real thing.

The limitations imposed by the district court and the Ninth Circuit in the case at bar, and the measures imposed by the court in *Ocean Mammal Institute v. Gates*, contrasted with the Navy's mitigation measures under the MMPA, subjects the Navy's MFA sonar operators to a patchwork of restrictions instead of consistent fleet-wide standards. Piecemeal restrictions which change from operating area to operating area pose too great a risk to the Navy's preparedness to conduct anti-submarine warfare. Military readiness requires constant training and assessment and repetitive hands-on use of equipment to ingrain procedures into very young and often times inexperienced personnel. *Amici*'s best professional judgment is that the Navy's mitigation measures are effective: they are uniform, applicable fleet-wide, well considered, and in keeping with the careful balance between putative harms to marine mammals and the need to train Navy sonar operators.

III. THE NINTH CIRCUIT ENJOINED THE NAVY'S USE OF MFA SONAR DESPITE THE FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT AND NO RECORD OF INJURY OR HARM TO ANY MARINE MAMMAL IN SOCAL

There is no evidence in the record that MFA sonar has caused any physical harm to a marine mammal. *Natural Res. Def. Council, Inc. v. Winter*, 518 F.3d 658, 696 (9th Cir. 2008). Other actual causes of marine mammal mortality eclipse the potential mortality imputed to sonar. *See generally Atlantic Fleet Active Sonar Training Environmental Impact Statement*, at Appendix E, Feb. 2008, *available at* http://afasteis.gcsaic.com/docs/Draft%20AFAST%20EIS_Appendix%20E,%20Cetacean%20Stranding%20Report.pdf. After an Environmental Assessment (EA), and backed by comprehensive studies and the input of the Department of Defense, the Department of Commerce, and the National Marine Fisheries Service, the Navy concluded that the use of MFA sonar with certain self-imposed mitigation measures would not have a significant impact on the environment. Consequently, NEPA did not require the preparation of an Environmental Impact Statement (EIS) for the proposed training exercises in SOCAL. This conclusion was consistent with the 40-year history of the Navy's use of MFA sonar of the same frequency and intensity in SOCAL, which has not resulted in a single documented case of injury, harm, or death to marine mammals.

In March 2007, respondents filed suit in the Central District of California, seeking a declaration that the Navy's SOCAL exercises violated NEPA, the ESA, and the CZMA. Respondents allege that the Navy's use of MFA sonar in SOCAL, even with the mitigation measures, would have a significant effect on the environment and consequently that the Navy should have prepared an EIS. The district court rejected the ESA claim, agreed with respondents on their NEPA and CZMA claims, and enjoined all use of MFA sonar during the Navy's SOCAL exercises. The district court found that respondents demonstrated probable success on the merits of their claim that the Navy violated NEPA by failing to prepare an EIS; that the Navy violated the CZMA because it submitted a consistency determination to the California Coastal Commission that did not take into account the planned use of MFA sonar; and the Navy violated the CZMA by failing to adopt the mitigation measures the CCC determined were necessary for the SOCAL exercises to be consistent with the California Coastal Management Program.

The Ninth Circuit rejected the district court's total ban, holding that it had not considered the public interest in having a trained and effective Navy and had not explained why a total prohibition on the SOCAL exercises was more appropriate than permitting the exercises to be conducted with mitigation measures. *Natural Res. Def. Council, Inc. v. Winter*, 502 F.3d 859 (9th Cir. 2007). The Ninth Circuit

remanded the case to the district court to modify the injunction and permit the exercises with mitigation measures. *Natural Res. Def. Council, Inc. v. Winter*, 508 F.3d 885 (9th Cir. 2007). On remand, the district court issued a new preliminary injunction allowing the Navy to complete the SOCAL exercises provided it complied with mitigation measures established by the court.

Shortly thereafter, the Council on Environmental Quality (CEQ), pursuant to its responsibilities under 40 C.F.R. § 1506.11, determined that emergency circumstances were presented, and permitted the Navy to continue its exercises without first completing an EIS. That regulation permits CEQ to exempt an agency from NEPA's EIS requirement:

> Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these regulations, the Federal agency taking the action should consult with the Council about alternative arrangements. Agencies and the Council will limit such arrangements to actions necessary to control the immediate impacts of the emergency. Other actions remain subject to NEPA review.

40 C.F.R. § 1506.11. Facing exercises it considered critical for deployment of the USS ABRAHAM LINCOLN Strike Group, the Navy also asked the President to exercise his authority under 16 U.S.C. § 1456(c)(1)(B) (2000). The President determined that the use of MFA

sonar is "essential to national security" and is in the "paramount interest of the United States," and exempted the Navy's use of MFA sonar in the SOCAL exercises from the requirements of the CZMA. The Navy subsequently adopted the mitigation measures recommended by the CEQ. *See Decision Memorandum Accepting Alternative Arrangements for the U.S. Navy's Southern California Operating Area Composite Training Unit Exercises and Joint Task Force Exercises Scheduled To Occur Between Today and January 2009*, 73 Fed. Reg. 4189 (2008).

Notwithstanding these exemptions, the district court upheld its injunction. It concluded CEQ's action was invalid because there were, in the district court's opinion, no "emergency circumstances" justifying an exemption from NEPA. The district court also found that Respondents had adequately demonstrated a possibility of irreparable harm. *Natural Res. Def. Council, Inc. v. Winter*, 527 F. Supp. 2d 1216, 1226-32 (C.D. Cal. 2008). The Ninth Circuit upheld the injunction, but *sua sponte* modified the district court's mitigation measures and imposed its own:

> the importance of the Navy's mission to provide for the national defense and the representation by the Chief of Naval Operations that the district court's preliminary injunction in its current form will "unacceptably risk" effective training and strike group certification and thereby interfere with his statutory responsibility under 10 U.S.C. § 5062 to "organiz[e], train[ ], and equip[ ] the Navy," we *sua sponte* partially

> and temporarily stay the preliminary injunction as adopted by the district court to the extent provided herein.

Natural Res. Def. Council, Inc. v. Winter, 518 F.3d 704, 705 (9th Cir. 2008). The modified mitigation measures established by the Ninth Circuit require the Navy:

> [T]o suspend its use of MFA sonar if a marine mammal is detected within 2,200 yards of the sonar source, except when MFA sonar is being used at a "critical point in the exercise," in which case the Navy shall reduce the MFA sonar level by 6 decibels when a marine mammal is detected within 1,000 meters from the sonar source, reduce the MFA sonar level by 10 decibels when a marine mammal is detected within 500 meters of the sonar source and suspend its use of MFA sonar when a marine mammal is detected within 200 meters of the sonar source. A "critical point in the exercise" is a point when, in the discretion of the Admiral overseeing the exercise or the commander of the sonar-emitting vessel, continued use of MFA sonar is critical to the certification of a strike group or the effective training of its personnel. For example, the responsible officer, in his discretion, might determine that a shutdown would fundamentally undermine effective training or certification because the particular exercise underway is at a stage that would be seriously compromised by a shutdown.
>
> . . .

> The second mitigation measure is modified to require the Navy, when significant surface ducting conditions are detected, to reduce the MFA sonar level by 6 decibels where a marine mammal is detected within 2,000 meters of the sonar source, reduce the MFA sonar level by 10 decibels where a marine mammal is detected within 1,000 meters of the sonar source, and suspend its use of MFA sonar where a marine mammal is detected within 500 meters of the sonar source.

Id. at 705-06. The Ninth Circuit affirmed the district court's injunction the same day in a separate opinion. *Natural Res. Def. Council, Inc. v. Winters*, 518 F.3d 658, 703 (9th Cir. 2008). The Ninth Circuit noted that the record contained "no evidence that marine mammals have been harmed by the use of MFA sonar in the Southern California Operating Area." *Id.* at 696. Despite that fact, the district court determined respondents had established "to a near certainty" that the Navy's use of MFA sonar would irreparably harm the environment and marine mammals. Both the court in the case at bar and in *Ocean Mammal Institute v. Gates* rejected the judgment of military professionals and the legislative and executive branches that harm to marine mammals was unlikely to occur, and even if it did, the need to prepare the Nation's naval forces was, on balance, more important.

SUMMARY OF ARGUMENT

Neither the district court, the Ninth Circuit, nor respondents disputed the present and growing threats posed by quiet, diesel electric submarines, and the need for the Navy to train realistically with MFA sonar to detect and neutralize those threats. The Ninth Circuit, however, overruled the judgment of those with the "necessary expertise" – naval warfare professionals and their civilian leaders – and prohibited the Navy from training effectively because of the mere *possibility* that marine mammals may be harmed, even though the court acknowledged the record was devoid of any evidence that any marine mammal had been injured by the Navy's use of MFA in SOCAL.

The courts below could not have concluded that the Navy's use of MFA sonar might result in irreparable injury to marine mammals since the Navy already had been exempted from the substantive limitations in the MMPA, the statute protecting marine mammals from harm. Congress, the Secretaries of Defense, Commerce and the Interior, and the Navy carefully balanced the Navy's need to train realistically, and mitigated putative harm to marine mammals under the national defense exemption to the MMPA.

ARGUMENT

I. IN THE 2004 MMPA AMENDMENT, CONGRESS ALLOWED THE SECRETARY OF DEFENSE TO EXEMPT THE NAVY'S ACTIVITIES IN THE INTEREST OF NATIONAL DEFENSE

The United States arguably has done more than any other country to provide for the protection of marine mammals, and to utilize its resources in their rejuvenation. *See* 16 U.S.C. § 1372(a)(1) (2000 & Supp. V 2005) (making it unlawful to "take" marine mammals, meaning to "harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill" them). The MMPA represents an explicit finding by Congress that these animals ought to be protected because they move through, or are instrumentalities of, interstate and international commerce. *See* 16 U.S.C. § 1361(5) (2000 & Supp. V 2005) (finding that marine mammals move in interstate commerce "and that the protection and conservation of marine mammals and their habitats is therefore necessary to insure the continuing availability of those products which move in interstate commerce"). The MMPA is the principal regulatory regime governing interaction with marine mammals. *See*, *e.g.*, 16 U.S.C. § 1543 (2000) ("no provision of [the Endangered Species Act] shall take precedence over any more restrictive conflicting provision of the Marine Mammal Protection Act of 1972").

Marine mammals such as whales, dolphins, and seals range throughout the oceans of the world in

every conceivable salt waterway, and MFA sonar training or its tactical use in any area could potentially affect them. By 2004, Congress had come to recognize that military exercises might sometimes result in harm to protected marine mammals, and the MMPA was amended to allow the Secretary of Defense, in consultation with the Secretaries of Commerce and Interior, to exempt actions of the Department of Defense from the MMPA:

> The Secretary of Defense, after conferring with the Secretary of Commerce, the Secretary of the Interior, or both, as appropriate, may exempt any action or category of actions undertaken by the Department of Defense or its components from compliance with any requirement of this Act, if the Secretary determines that it is necessary for the national defense.

16 U.S.C. § 1371(f)(1) (Supp. V 2005). The statutory exemption was adopted in the wake of *Natural Res. Def. Council, Inc. v. Evans*, 364 F. Supp. 2d 1083 (N.D. Cal. 2003), a case which limited the Navy's use of low frequency active sonar. *See* National Defense Authorization Act for Fiscal Year 2004, Pub. L. No. 108-136, 117 Stat. 1391, 1433-35 (2004). The exemption was not without limitation, since the amendment provides that any such exemption is valid only for two years, after which time the Secretary of Defense must confer with the Secretary of Commerce and make a new determination of the necessity of the additional exemption. 16 U.S.C. § 1371(f)(2)(B) (Supp. V 2005).

The exemption allowing the Navy to "take" marine mammals was Congress' determination that military commanders and their civilian leaders could exercise their best professional judgment about the training needs of the fleet even if it might mean "harassing, hunting, capturing, or killing" marine mammals otherwise protected by the MMPA. *See* 16 U.S.C. § 1371(f)(2)(B) (Supp. V 2005) (authorizing Secretary of Defense to exempt the Department from the MMPA). Put another way, the statutory protection provided by Congress for marine mammals was always subject to revocation or modification, and Congress did so. Congress permitted those most qualified to decide when critical training needs must take precedence over a perceived threat to marine mammals, echoing this Court's statement in *Dep't of the Navy v. Egan*, 484 U.S. 518 (1988), that threats to national defense must be evaluated by those "with the necessary expertise." *Id.* at 529. An exemption to permit the Navy to train to defend against submarine threats makes sense when the statute is based on Congress' commerce power, *see* 16 U.S.C. § 1361(5) (2000 & Supp. V 2005), since it would plainly affect interstate and international maritime commerce if the United States Navy was anything less than fully prepared to utilize MFA sonar to detect silent running submarines.

On January 23, 2007, the Deputy Secretary of Defense exempted all the Navy's military readiness activities employing MFA sonar for the duration of

the exercises in SOCAL from the requirements of the MMPA. The exemption determined:

> it is necessary for the national defense to exempt all military readiness exercises that employ mid-frequency active sonar or Improved Extended Echo Ranging sonobuoys (IEER), either during major training exercises, or within established Department of Defense maritime ranges or established operating areas, from compliance with the requirements of the Marine Mammal Protection Act, Title 16, Sections 1361 1421h, of the United States Code.

Memorandum for the Secretary of the Navy, Subject: *National Defense Exemption from Requirements of the Marine Mammal Protection Act for Certain DoD Military Readiness Activities That Employ Mid-Frequency Active Sonar or Improved Extended Echo Ranging Sonobuoys*, Jan. 23, 2007, *available at* http://www.hawaiioceanlaw.com/files/England_Memo_1_23_07.pdf.

Moreover, even with the full exemption granted by section 1371(f), the Navy had gone to extraordinary lengths to minimize as much as possible the effects on marine mammals. *See Ocean Mammal Inst.*, 546 F. Supp. 2d at 985-91 (reviewing mitigation measures from the exemption and the case at bar). It adopted a number of measures which had been standard operating procedure in the Navy's ASW exercises since 2004. These measures included extra visual lookouts with enhanced searching procedures,

limitations on transmission levels when within 1,000 yards of marine mammals, additional powering down of sonar when mammals are inside 500 yards from the sonar equipment, and exercise planners must account for bathymetry and sound conditions. These mitigation measures are practically advantageous for several reasons. First, they are in place fleet-wide and training and operation of sonar equipment is standardized and universal. Second, these mitigation measures were developed in consultation with the Department of Commerce allowing the officials who enforce the MMPA to collaborate with the military and protect the marine mammal resources in a global fashion. Finally, because the Navy itself designed the mitigation measures, those measures necessarily take into account the staffing, equipment issues, and practical obstacles to protection of the mammals, while minimizing any negative impact to national defense.

The enactment of the exemption by Congress long after the original legislation and after NEPA's procedural requirements, reflects that it was not simply an afterthought, but was designed to address specific shortcomings in the original legislation, and refutes the claim that the administration manipulated the exemption power to impermissibly overrule the courts. The administration was simply exercising the discretion granted by Congress, by following the best advice of naval warfare professionals.

II. NEPA IS INAPPLICABLE BECAUSE THE NAVY BALANCED AND MITIGATED PUTATIVE HARMS TO MARINE MAMMALS UNDER THE SUBSTANTIVE PROVISIONS OF THE MMPA

Because Congress, the Secretaries of Defense, Commerce and the Interior, and the Navy carefully balanced the need to train realistically with MFA sonar, and mitigated putative marine mammal harm under the substantive provisions of the MMPA, it was illogical for the courts below to enjoin training exercises until those same issues were addressed under the purely procedural requirements of NEPA.[6] Since this possible harm had already been accounted for and deemed acceptable, information gathering under NEPA was unnecessary.

The MMPA is the principal substantive protection for marine mammals. By contrast, NEPA is an informational and procedural statute, which unlike the MMPA, provides no substantive protection for marine mammals. NEPA does not mandate any

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[6] NEPA also has built-in recognition that the statute's requirements may be avoided in emergency situations. *See* 40 C.F.R. § 1506.11. Similarly, regarding the CZMA, the President may "exempt from compliance those elements of the Federal agency activity that are found by the Federal court to be inconsistent with an approved State program, if the President determines that the activity is in the paramount interest of the United States." 16 U.S.C. § 1456(c)(1)(B) (2000). Both of these exemptions have been invoked, reinforcing the conclusion that the harms have already been considered.

particular outcome, only that information be gathered and disseminated:

> The sweeping policy goals announced in § 101 of NEPA are thus realized through a set of "action-forcing" procedures that require that agencies take a "'hard look' at environmental consequences," . . . and that provide for broad dissemination of relevant environmental information. Although these procedures are almost certain to affect the agency's substantive decision, it is now well settled that NEPA itself does not mandate particular results, but simply prescribes the necessary process.

Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989) (quoting *Kleppe v. Sierra Club*, 427 U.S. 390, 410 n.21 (1976)). Consequently, NEPA does not dictate results, but rather provides guidelines requiring federal agencies to assess any major federal action that may have a significant impact on the environment. *See Dep't of Trans. v. Public Citizen*, 541 U.S. 752, 756-57 (2004) (citing *Robertson*, 490 U.S. at 349-50). "If the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs." *Robertson*, 490 U.S. at 350 (citations omitted). Since NEPA itself is a procedural statute, the only role for a reviewing court in a NEPA challenge is to determine whether the agency has considered the environmental consequences of the proposed action; the court "cannot interject itself within the

area of discretion of the executive as to the choice of the action to be taken." *Stryker's Bay Neighborhood Council v. Karlen*, 444 U.S. 223, 227 (1980) (quoting *Kleppe*, 427 U.S. at 410 n.21).

Congress, recognizing the inherent limitations of the legislative process in environmental regulation, set up a framework to handle the multitude of environmental issues that could arise within the United States and its territories. In so doing, it never precluded itself from enacting subsequent specific environmental legislation to regulate the treatment of a particular species or genus, nor did it preclude itself from exempting areas of the environment or species or both from the dictates of NEPA or other environmental or species protection acts. The Navy's MMPA exemption and the mitigation measures it undertook pursuant thereto rendered NEPA (and the CZMA to which the same analysis applies throughout) inapplicable to this action.

Under the displacement doctrine, NEPA does not apply when procedures under another statute displace or make superfluous the procedures under NEPA, or provide the "functional equivalent" of those procedures. "Displacement" means that Congress has enacted a statutory scheme whereby NEPA's procedures are supplanted. "Functional equivalence" means that the procedures of the statute in question are the functional equivalent of NEPA. Here, the MMPA comprehensively provides for orderly consideration of alleged harms by MFA sonar to marine mammals. *Cf. Merrell v. Thomas*, 807 F.2d 776, 780

(9th Cir. 1986) (registration process under the Federal Insecticide, Fungicide, and Rodenticide Act was the functional equivalent of NEPA and made compliance with NEPA "superfluous"); *Western Nebraska Res. Council v. Envt'l Protection Agency*, 943 F.2d 867, 871-72 (8th Cir. 1991) (many circuits hold that the EPA does not need to comply with the formal requirements of NEPA in performing its environmental protection functions because "organic legislation" mandates specific procedures for considering the environment that are functional equivalents of the NEPA process) (citing *Alabama* ex rel. *Siegelman v. Envt'l Protection Agency*, 911 F.2d 499, 504 (11th Cir. 1990)). The MMPA is the functional equivalent of NEPA because the substantive protections provided in the MMPA provide *more* protection to marine mammals that the informational NEPA, and the provisions of the MMPA, including the exemption, displaced any procedural requirements of NEPA.

Consequently, the Ninth Circuit should not have ignored the MMPA exemption which expressly addressed any purported harm to marine mammals. Under the MMPA, the Navy is allowed to "take" them. *See* 16 U.S.C. § 1371(f)(2)(B) (Supp. V 2005). *Speculative* harm cannot qualify as irreparable injury under NEPA, when the potential harms have already been considered by the authority delegated by Congress to make such determinations, and the risk has been deemed acceptable.

In areas of national security and defense of the Nation, the judiciary's role is at its nadir. *See, e.g.*,

Rostker v. Goldberg, 453 U.S. 57, 71 (1981) ("The responsibility for determining how best our Armed Forces shall attend to that business rests with Congress . . . and with the President"). Indeed, courts have repeatedly recognized that national defense exigencies can override even technical violations of environmental laws. In *Concerned about Trident v. Rumsfeld*, 555 F.2d 817 (D.C. Cir. 1977), as here, the Navy attempted to act as a good steward of the environment while at the same time fulfilling its national security duties:

> As the Navy has taken no arbitrary or capricious action here but has attempted to comply in good faith with the mandates of NEPA, failing in only two instances, we do not believe that the issuance of an injunction pending the Navy's revision of the Final EIS is necessary, especially since we have found that the Navy gave proper weight to environmental considerations in deciding to proceed with this strategically important project.

Id. at 830. *See also Weinberg v. Romero-Barcelo*, 456 U.S. 305, 310-11 (1982) (refusing to enjoin Navy's use of training island despite "technical violations").

Here, the Navy, having balanced and mitigated any putative harm to marine mammals under the substantive provisions of the MMPA in favor of national security, is exempt from the procedural requirements of NEPA.

CONCLUSION

The judgment of the Court of Appeals should be reversed.

Respectfully submitted,

AUGUST 2008.

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AMICUS CURIAE BRIEF

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Supreme Court of the United States

DONALD C. WINTER,
SECRETARY OF THE NAVY, et al.,

Petitioners,

v.

NATURAL RESOURCES
DEFENSE COUNCIL, INC., et al.,

Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

BRIEF AMICUS CURIAE OF PACIFIC LEGAL FOUNDATION IN SUPPORT OF PETITIONERS

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QUESTIONS PRESENTED

1. Whether CEQ permissibly construed its own regulation in finding "emergency circumstances."

2. Whether, in any event, the preliminary injunction, based on a preliminary finding that the Navy had not satisfied NEPA's procedural requirements, is inconsistent with established equitable principles limiting discretionary injunctive relief.

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IDENTITY AND INTEREST OF AMICUS CURIAE

Pursuant to Supreme Court Rule 37, Pacific Legal Foundation (PLF) respectfully submits this brief amicus curiae in support of Petitioners Donald C. Winter, Secretary of the Navy, et al.[1]

PLF was founded over thirty years ago and widely is recognized as the largest and most experienced nonprofit legal foundation of its kind. PLF litigates matters affecting the public interest at all levels of state and federal courts and represents the views of thousands of supporters nationwide, advocating limited government, individual rights, and free enterprise. PLF attorneys have litigated numerous cases addressing the need for a balanced approach to environmental regulation, and were counsel of record in this Court in *Rapanos v. United States*, 547 U.S. 715 (2006). PLF attorneys participated as amicus curiae in this Court, regarding the scope of the Endangered Species Act (ESA), in *National Ass'n of Home Builders v. Defenders of Wildlife*, 127 S. Ct. 2518 (2007), and *Bennett v. Spear*, 520 U.S. 154 (1997), and have authored amicus briefs in dozens of ESA cases in federal courts across the nation. *See, e.g., GDF Realty Investments, Ltd. v. Norton*, 362 F.3d 286 (5th Cir. 2004).

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[1] Pursuant to this Court's Rule 37.3(a), all parties have consented to the filing of this brief.

Pursuant to Rule 37.6, Amicus Curiae affirms that no counsel for any party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than Amicus Curiae, its members, or its counsel made a monetary contribution to its preparation or submission.

PLF participated as amicus curiae in the Ninth Circuit in a case nearly identical to the one before this Court, dealing with an injunction of Navy sonar training exercises owing to ESA concerns. *Natural Res. Def. Council v. Gutierrez*, 457 F.3d 904 (9th Cir. 2006). PLF's analysis of the need for a proper balance between provisions of the ESA and the public's interest in a strong national defense, among other interests, will provide a valuable and necessary viewpoint to assist the Court in resolving this case.

SUMMARY OF ARGUMENT

Too often, federal courts subordinate equitable rules and statutory mandates to provisions of the Endangered Species Act. Much of this deference owes to courts' misapplication of this Court's "species above all else" language in *TVA v. Hill*, 437 U.S. 153, 188 (1978). By failing to recognize this Court's limitation of that language elsewhere in that opinion, and in subsequent cases, these courts functionally have turned the ESA into an overarching legal mandate to be read into all other decisions of the judiciary. This improper interpretation of the ESA erroneously obviates not just competing statutory mandates as established by Congress, but also traditional principles governing courts sitting in equity and weighing injunctive relief. This case is an unfortunate illustration of this judicial approach, as the Ninth Circuit has relegated to the status of afterthought, in the name of protecting listed species, the public interest in national defense and military readiness.

This approach has tangible real world effects for the public's interest in matters ranging from a strong national defense to a productive economy to protection against natural disasters. This Court should reaffirm

Congress's directive that the Endangered Species Act is not a predominant super-statute, nor a first among equals, but a law to be read and applied in concert with others and with the rules governing equitable relief.

ARGUMENT

I

CONGRESS DID NOT INTEND THE ESA TO SUBSUME TRADITIONAL EQUITABLE PRINCIPLES AND COMPETING STATUTORY MANDATES

For years, courts considering injunctive relief in the ESA context erroneously have dispensed with traditional principles of equity that govern injunctions. *See Weinberger v. Romero-Barcelo*, 456 U.S. 305, 312 (1982) (setting forth factors weighed in considering injunctive relief, including a comparison of the hardships of the parties and accounting for the public's interest). This phenomenon is most pronounced in the Ninth Circuit Court of Appeals, and the district courts under its ambit, where such procedure has become a controlling rule. *See Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 422 F.3d 782, 793-94 (9th Cir. 2005) ("The traditional preliminary injunction analysis does not apply to injunctions issued pursuant to the ESA."). The Ninth Circuit's putative source for this rule is a conglomeration of other of its own opinions asserting that "[i]n cases involving the ESA, Congress removed from the courts their traditional equitable discretion in injunction proceedings of balancing the parties' competing interests." *Id.* (quoting *Nat'l Wildlife Fed'n v. Burlington N. R.R., Inc.*, 23 F.3d 1508, 1511 (9th Cir. 1994) (citing *Friends of the Earth*

v. United States Navy, 841 F.2d 927, 933 (9th Cir. 1988)).

But Congress has done no such thing, as a reading of the ESA's text demonstrates. This Court long has held that a federal court's equitable powers may be limited by statute, but that courts sitting in equity have discretion unless "a statute clearly provides otherwise," and such traditional equitable powers may be "displaced only by a 'clear and valid legislative command.'" *United States v. Oakland Cannabis Buyers' Co-Op*, 532 U.S. 483, 496 (2001) (citations omitted). That federal courts such as the Ninth Circuit must cobble together authority for the proposition that Congress has taken these steps in the ESA is fair proof that Congress did not "clearly provide" for the displacement of equitable principles in the text of the ESA itself.

The process of judicial construction of statutes begins and generally ends with the text of the statute, where that text is clear; the "starting point must be the language employed by Congress." *Am. Tobacco Co. v. Patterson*, 456 U.S. 63, 68 (1982) (quoting *Reiter v. Sonotone Corp.*, 442 U.S. 330, 337 (1979)). "Thus, '[a]bsent a clearly expressed legislative intention to the contrary, that language must ordinarily be regarded as conclusive.'" *Id.* (quoting *Consumer Prod. Safety Comm'n v. GTE Sylvania, Inc.*, 447 U.S. 102, 108 (1980)). Furthermore, "[u]nless otherwise defined, statutory terms are generally interpreted in accordance with their ordinary meaning." *BP Am. Prod. Co. v. Burton*, 549 U.S. 84, 127 S. Ct. 638, 643 (2006). To flesh out the meaning of any given text, and as part of the plain meaning analysis, courts may rely upon canons of interpretation. *See Chickasaw Nation*

v. United States, 534 U.S. 84, 85 (2001) (canons assist in determining legislative intent). With respect to the ESA, there is nothing on the face of the statute, nor is there any interpretable ambiguity, that would purport to affect the kind of clear displacement necessary for courts of equity to ignore their traditional rules.

Lower courts are quick to cite this Court's opinion in *TVA*, 437 U.S. 153, to support the issuing of even the most drastic injunctive measures in ESA cases without analyzing traditional equitable factors such as the balance of harms and the public interest. *Nat'l Wildlife Fed'n*, 422 F.3d at 794. These courts thus narrowly rely on one aspect of a fact-specific decision to rewrite a law to mean something it does not. *TVA*'s renowned "species above all else" language, 437 U.S. at 188, must be considered in light of the factual setting before this Court in that matter (the assured extinction of a listed species) and must not be applied, without discretion, to other, distinct settings.

This common-sense approach has been recognized by the more than two dozen federal courts–including this Court–that have declined to apply *TVA*'s fact-specific holding to the very different cases before them. *See, e.g., Amoco Prod. Co. v. Village of Gambell, Alaska*, 480 U.S. 531, 543 n.9 (1987) (addressing need to distinguish between distinct factual settings and the unique situation at issue in *TVA*); *Water Keeper Alliance v. United States Dep't of Def.*, 271 F.3d 21 (1st Cir. 2001) (declining to find that the ESA overrides all other competing interests); *Defenders of Wildlife v. Norton*, 257 F. Supp. 2d 53 (D.D.C. 2003) (declining to follow *TVA* because this Court in *TVA* was confronted with a unique set of facts). In sum, *TVA*, and the statute it interprets, deserve respect in applicable

settings, but do not change the way American courts discharge their constitutional duties.

This Court has recognized the error committed by lower courts that transform the ESA and *TVA* into a controlling meta-rule that governs all of American law. In *Amoco Production Co.*, this Court, while addressing *TVA*, still held that "a court must balance the competing claims of injury and must consider the effect on each party of the granting or withholding of the requested relief." 480 U.S. at 542. So, even in ESA cases, the traditional balance of harms analysis must be employed, and where parties seeking an injunction have failed to meet their burden with respect to the traditional test, courts must deny injunctive relief. To this end, this Court held only four years after *TVA* that "[t]he grant of jurisdiction to ensure compliance with a statute hardly suggests an absolute duty to do so under any and all circumstances, and a federal judge sitting as chancellor is not mechanically obligated to grant an injunction for every violation of law." *Weinberger*, 456 U.S. at 313.

At least as egregious as courts' use of the ESA to abrogate the traditional rules governing injunctive relief is their elevation of the ESA into a super-statute that effectively amends and controls all other statutory mandates under American law. This Court recently overturned a Ninth Circuit decision to this effect in *National Ass'n of Home Builders*, 127 S. Ct. 2518, 2532-33 (declining to read ESA provisions as superseding Clean Water Act rules). In numerous cases, including the recent example of *Florida Key Deer v. Paulison*, 522 F.3d 1133 (11th Cir. 2008), *see* Part II below, courts erroneously have read into other statutes the requirements of the ESA. That is, courts have

taken the fact-specific "species above all else" language from *TVA* to mean not just that environmental protection must take precedence over all other concerns when considering injunctive relief under the ESA, but also that this protection must be paramount even when the interpretations of other government or private actions are at issue. Such a rule implicitly amends every federal organic statute, amplifies all existing government authority, institutes a de facto national land use regime, and, to that extent, repeals all other contrary directives and guarantees.

This framework is wrong. First, it violates the well-established canon that implied amendments of organic statutes are disfavored. *Nat'l Ass'n of Home Builders*, 127 S. Ct. at 2532; *see United States v. Welden*, 377 U.S. 95, 103 n.12 (1964). "Outside [ ] limited circumstances, 'a statute dealing with a narrow, precise, and specific subject is not submerged by a later enacted statute covering a more generalized spectrum.'" *Nat'l Ass'n of Home Builders*, 127 S. Ct. at 2532 (quoting *Radzanower v. Touche Ross & Co.*, 426 U.S. 148, 153 (1976)). It also ignores the complete absence of any expressed congressional intent that the ESA cabins or amends all conflicting or contrary federal obligations. Presumably, Congress easily could have achieved that end through one of two means. Congress could have provided that, "notwithstanding any law to the contrary, federal agencies shall insure that none of their actions jeopardizes a listed species." Or, Congress could have dropped the reference to "insure" (implying a measure of control over the effects of activities) and could have directed that "no federal agency shall jeopardize a listed species." Instead of these options, Congress chose to condition the protections of the ESA by imposing their controls

within the existing framework of federal duties. Congress intended the ESA to be part of that vast regulatory machine, not the engine driving it.

This case represents a confluence of the "ESA trumps rules of equity" and "ESA as super-statute" approaches to judicial decision making. It is of note that the court below in this case ignored its own rule for ESA cases, and actually did undertake at least a cursory balancing of harms. *Natural Res. Def. Council v. Winter*, 518 F.3d 658, 702 (9th Cir. 2008) Still, the substantive thrust of the controlling rule is in evidence throughout the opinion, where potential harm to species is afforded predominance over any and all competing concerns.[2] The lower court was wrong to do this, for Congress itself mandated the opposite result—national security concerns trumping potential harm to species—when it amended the Marine Mammal Protection Act to exempt the sonar training at issue from the MMPA's requirements. 16 U.S.C. § 1371(f). The lower court thus has found statutory predominance where there is none (in the ESA) and ignored it where Congress has spelled it out explicitly. This Court should reverse the lower court's judgment and clarify the weight to be accorded the ESA in balancing competing statutory mandates and in the traditional judicial exercise of equitable discretion.

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[2] The lower court's formulation of merely potential harm as sufficient for enjoining the Navy's exercises is itself a deviation from traditional equitable rules that require a significant threat of harm amounting to irreparable injury. This reworking was necessary because there appears to be no evidence that the Navy's sonar training actually ever has harmed a protected species. *See* Petition for Certiorari at 26-29.

II

IMPROPER JUDICIAL DEFERENCE TO THE ESA CAN RESULT IN HARM TO THE AMERICAN PUBLIC

For this Court to reaffirm the ESA's place within the whole of American law is no mere academic exercise. A legal system that views the ESA as a super-statute dominating all other laws too often results in tangible harm to the American public. While examples are legion wherein the ESA has been misapplied to thwart socially beneficial actions both governmental and private, three case studies in particular illustrate the need for a return to a proper judicial balance between environmental protection and other public interests.

A. The ESA and Hurricane Katrina

In the immediate aftermath of Hurricane Katrina in 2005, observers wondered why the region was not more physically ready for a disaster that was not unforeseen. Soon, journalists and commentators alike began to identify deference to the Endangered Species Act as a contributor to the area's lack of preparation.

Mere days after Katrina, Ralph Vartabedian and Peter Pae of the *Los Angeles Times* reported on a hurricane barrier effort thwarted via ESA injunction:

> In the wake of Hurricane Betsy 40 years ago, Congress approved a massive hurricane barrier to protect New Orleans from storm surges that could inundate the city. But the project, signed into law by President Johnson, was derailed in 1977 by an environmental lawsuit. Now the question is:

> Could that barrier have protected New Orleans from the damage wrought by Hurricane Katrina?

Ralph Vartabedian & Peter Pae, *A Barrier That Could Have Been*, Los Angeles Times, Sept. 9, 2005, at A10.

The *Times* article quotes several authorities who answer that question in the affirmative. "'If we had built the barriers, New Orleans would not be flooded,' said Joseph Towers, the retired chief counsel for the Army Corps of Engineers New Orleans district." *Id.* Former Democratic Senator J. Bennett Johnston of Louisiana concurred: "It would have prevented the huge storm tide that came into Lake Pontchartrain." *Id.* Most definitively:

> Johannes Westerink, a professor of civil engineering at the University of Notre Dame who co-developed [a hurricane computer simulation program], said that based on the latest simulation, the system proposed after Betsy would have been an "effective barrier" against the surge from Hurricane Katrina. "It would have stopped that," he said.

Id.

The Lake Pontchartrain Hurricane Protection Project was designed to construct barriers to guard against just the type of levee overflow that resulted in Hurricane Katrina's destruction:

> The barrier would have run from a point near the Mississippi state line, known as Apple Pie Ridge, southwest across the marshlands all the way to the main levees of the Mississippi River, roughly 25 miles.

> Most of the barrier would have consisted of levees, roughly 9 feet to 14 feet high. In addition, two massive control structures were to be placed on the inlets to Lake Pontchartrain.

Id.

But in 1977, in response to a lawsuit brought by Save Our Wetlands, the federal district court for the Eastern District of Louisiana halted the project, finding that it would alter the quality of the area's water and therefore harm marine life. *Save Our Wetlands, Inc. v. Rush*, No. 75-3710 (E.D. La.) (Dec. 30, 1977). A year before *TVA*, a court thus disregarded the public's need to be protected from the kind of disaster that already had happened, instead blocking the project in the name of "shellfish and other aquatic life." *Los Angeles Times* at A10.

The court's decision issuing the injunction contains no discussion whatsoever of any interests other than those of protecting marine life. A traditional balance of harms analysis, or an examination of the public's interest in protection against large scale natural disaster, are not touched upon. The *Times* article quotes Joseph Towers, the former Corps chief counsel, for his assessment of the balancing the court declined to undertake: "'My feeling was that saving human lives was more important than saving a percentage of shrimp and crab in Lake Pontchartrain,' Towers said. 'I told my staff at the time that this judge had condemned the city. Some people said I was being a little dramatic.'" *Id.*

The *Save our Wetlands* suit was not sui generis. Writing a week after Katrina for *National Review*

Online, John Berlau of the Competitive Enterprise Institute recounted several more recent environmental lawsuits that hampered projects aimed at protecting the New Orleans area from catastrophic flooding. One such suit, brought by the Sierra Club and other groups, delayed improvements to 303 miles of levees across the region needed to protect against levee "failure [that] could wreak catastrophic consequences on Louisiana and Mississippi" according to an Army Corps spokesman. John Berlau, *Greens vs. Levees*, National Review Online, Sept. 8, 2005.[3] The suit claimed that the levee project potentially might harm "bottomland hardwood forests" that served as habitat for the Louisiana black bear and "all birds breeding in the lower Mississippi River valley." *Id.*

B. *Florida Key Deer v. Paulison*

The American public's understandable and simple desire for a nice place to call home is in large part the cause of the present credit crisis that, in turn, has helped slow the growth of the entire American economy. The dearth of affordable housing, particularly in high population areas such as South Florida, stems in some degree from the vast swaths of land off-limits to development because of environmental laws and the judicial decisions interpreting them.

One such decision is that of *Florida Key Deer v. Paulison*, 522 F.3d 1133 (11th Cir. 2008). This case centered on environmentalist concerns that the federal government's administration of the National Flood Insurance Program made flood insurance more accessible and thus encouraged development in the

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[3] *Available at* www.nationalreview.com.

Florida Keys, and that this development put at risk endangered and threatened species including the Florida Key Deer. 522 F.3d at 1139-42. The district court enjoined the government from administering the Flood Insurance Program in areas that are habitat to the listed species. *Florida Key Deer v. Brown*, 386 F. Supp. 2d 1281 (S.D. Fla. 2005), and the Eleventh Circuit Court of Appeals upheld the injunction. *Key Deer*, 522 F.3d at 1148.

Like the present case, the *Key Deer* courts' improper reading of the ESA obviated both traditional equitable rules and the public interest promoted by competing federal statutes. Ignoring cases such as *Amoco Production Co.*, the district court cited *TVA* a half-dozen times to dispense with a bona fide examination of whether an injunction would harm the public's interest in affordable housing. *Brown*, 386 F. Supp. 2d at 1287-89. Having improperly established from the outset that *TVA* "forecloses" consideration of whether issuing the injunction would "disserve the public interest," *id.* at 1284, the district court proceeded to, in "an abundance of caution," undertake a mechanical analysis anyway. *Id.* at 1285. Not surprisingly, considering the context—and in a manner similar to that of the lower court in the present case—all interests other than the protection of listed species were dismissed as subordinate. *Id.* at 1287-89. The Eleventh Circuit affirmed this analysis without even cursorily addressing the public interest. *Key Deer*, 522 F.3d at 1147-48.

The courts in *Key Deer* essentially rewrote the National Flood Insurance Act to incorporate provisions of the ESA. Congress enacted the flood insurance program with the very limited purpose of offering flood

insurance policies to the public. FEMA, the agency responsible for administering the program, has no control over a private landowners' actions once the policy is sold, nor can the agency even condition the offer of a policy on ESA compliance prior to sale. *See generally* 522 F.3d at 1136-38. Nevertheless, the *Key Deer* courts ignored Congress's narrow legislative command in the name of *TVA*, writing that the ESA took precedence because "statutes written in broad, sweeping language should be given broad, sweeping application." *Brown*, 386 F. Supp. 2d at 1289 n.7.

The harm to the public resulting from the *Key Deer* injunction has yet to be fully realized, but its contours are emerging. Thousands of individual property owners are covered by the injunction, though their property never has been designated as habitat for the listed species. They must pay a fee to the environmentalists' law firm to petition the court to be removed from the injunction's ambit, as individual property owners are forbidden from petitioning the court themselves. Rob Busweiler, *'FEMA List is Holding Me Hostage,' Says Keys Resident*, Key West Citizen, Aug. 3, 2008.[4] Owners seeking to build affordable housing—or who began construction before the injunction and now are unable to complete it—complain of being "held hostage" by the injunction. *Id.*

The National Association of Home Builders, in its role as amicus curiae in the Eleventh Circuit, noted the State of Florida's opinion that "[t]here is an affordable housing crisis in the Florida Keys." Brief Amicus

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[4] *Available at* http://www.keysnews.com/510184351976 20.bsp.htm.

Curiae of the Nat'l Ass'n of Home Builders, *Florida Key Deer v. Paulison*, 522 F.3d 1133, at 24-25.[5] This crunch only will worsen as lenders tighten their credit requirements in response to the current mortgage situation. The most simple solution to this affordable housing crisis is to open up more private land for development, thus increasing the supply of available housing. It is an option foreclosed, in part, by the *Key Deer* injunction.

C. Improper Deference to the ESA Endangers Firefighters and Frustrates Their Work

In his recent book *Green Gone Wild—Elevating Nature Above Human Rights*, M. David Stirling writes of several instances of environmental lawsuits complicating firefighters' efforts to battle forest fires. M. David Stirling, *Green Gone Wild—Elevating Nature Above Human Rights* 189-97 (2008). Stirling recounts restrictions on tools such as scooping water from lakes—for fear of harming fish in the lakes—that quite probably have led directly to firefighters' deaths. *Id.* at 192. Most relevant to this case, though, is a recent Montana case where a district court effectively prohibited firefighters' emergency use of fire retardant unless government officials first conduct a regulatory consultation under the Endangered Species Act:

> In October, 2003, during what would be the most devastating fire season in California history, a preservationist group known as Forest Service Employees for Environmental Ethics (FSEEE) filed the "first-ever lawsuit challenging the Forest Service's firefighting

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[5] *Available at* 2006 WL 4127917.

> mission and practices." . . . Claiming, among other things, that chemical fire retardants and bulldozers kill and destroy the habitat of ESA-listed fish and other species, FSEEE asked the federal court to stop the Forest Service and its firefighters from using aerially applied chemical retardants and bulldozers.

Id. at 195-96. Stirling reports that the Forest Service had adopted environmental guidelines to protect against the careless spreading of the essential retardant, and asserted that a fire-by-fire regulatory consultation was not feasible for a task that is the essence of emergency. *Id.*

The federal district court for the District of Montana disagreed. Amounting to an injunction against the use of the retardant (the court, in fact, denied the plaintiffs' request for an injunction as moot due to the substantive thrust of the decision), the court denied the firefighters the ability to use the fire retardant without first conducting the laborious consultation. *Forest Serv. Employees for Envtl. Ethics v. U.S. Forest Serv.*, 397 F. Supp. 2d 1241, 1256-57 (D. Mont. 2005). The court afforded no deference to the life-and-death needs of the firefighters battling the fires, nor to the people they protect, instead mandating a rote compliance with ESA strictures regardless of circumstances and owing to an express concern for "aquatic environments," "forest resources," and "fish kills." *Id.* at 1244, 1254-55. So too did the court repeatedly dismiss the Forest Service's common-sense argument that regulatory consultation is not conducive to fighting wildfires that can spark and rage in an

instant, *see id.* at 1253, holding that the ESA allows for no exceptions.

These three cases, like the case before this Court, evidence a fundamental imbalance in current judicial interpretations of environmental law. It is too common for courts to enjoin socially beneficial activity without paying even lip service to the public interest served by that activity, instead foregoing traditional equitable rules and subordinating competing statutory mandates in favor of deference to the Endangered Species Act. This Court should correct this imbalance and reaffirm Congress's intent that the ESA is but one law among many, serving, not subsuming, the public interest.

CONCLUSION

For the reasons stated above, the judgment of the Ninth Circuit should be reversed.

DATED: August 12, 2008.

Respectfully submitted,

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Petitioners,

v.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL.,
Respondents.

On Writ of Certiorari to the United States Court of Appeals for the Ninth Circuit

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BRIEF FOR AMICI CURIAE THE WASHINGTON LEGAL FOUNDATION, REAR ADMIRAL JAMES J. CAREY, U.S. NAVY (RET.), NATIONAL DEFENSE COMMITTEE, AND ALLIED EDUCATIONAL FOUNDATION IN SUPPORT OF PETITIONERS

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INTEREST OF AMICI CURIAE[1]

The Washington Legal Foundation (WLF) is a non-profit public interest law and policy center with supporters in all 50 states. WLF devotes a substantial portion of its resources to promoting America's national security. To that end, WLF has appeared in this and numerous other federal courts to ensure that the United States government is not deprived of the tools necessary to protect this country from those who would seek to destroy it and/or harm its citizens. *See, e.g., Hamdan v. Rumsfeld*, 126 S. Ct. 2749 (2006); *Hamdi v. Rumsfeld*, 542 U.S. 507 (2004); *Rasul v. Bush*, 542 U.S. 466 (2004). More relevantly, WLF has appeared in cases advocating the properly limited application of environmental laws to military training and combat readiness activities. *See, e.g., Hudson River Sloop Clearwater, Inc. v. Dep't of the Navy*, 891 F.2d 414 (2d Cir. 1989) (upholding sufficiency of Navy's environmental impact statement with respect to deployment of nuclear weapons on ships based at port); *Ctr. for Biological Diversity v. Pirie*, 201 F. Supp. 2d 113 (D.D.C. 2002) (enjoining live fire training exercises for violations of Migratory Bird Treaty Act), *dismissed as moot, sub nom., Ctr. for Biological*

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[1] Pursuant to Rule 37.6 of the Rules of the Supreme Court of the United States, amici state that no counsel for a party authored this brief in whole or in part, and no counsel or party made a monetary contribution intended to fund the preparation or submission of this brief. No person other than amici, their members, or their counsel made a monetary contribution to its preparation or submission. The parties have consented to the filing of this brief. Letters of consent have been lodged with the Clerk.

Diversity v. England, No. 02-5160 & 02-5180, 2003 WL 179848 (D.C. Cir. Jan. 23, 2003).

Rear Admiral James J. Carey, U.S. Navy (Ret.), served 33 years in the U.S. Navy and Naval Reserve, including service in Vietnam. He is a former Chairman of the U.S. Federal Maritime Commission and current Chairman of the National Defense Committee (NDC), which is also joining in this brief. The NDC is a grass roots pro-military organization supporting a larger and stronger military as well as the election of more veterans to the U.S. Congress.

The Allied Educational Foundation (AEF) is a non-profit charitable foundation based in Englewood, New Jersey. Founded in 1964, AEF is dedicated to promoting education in diverse areas of study, such as law and public policy, and has appeared in this Court on a number of occasions along with WLF in national security cases.

In this case, the lower courts found that the Navy's use of mid-frequency active (MFA) sonar in the Pacific Ocean during its vital training exercises should be severely restricted while the Navy prepares a full environmental impact statement (EIS) to determine the impact of sonar on marine mammals, despite the fact that (1) over the past 40 years in this area, no evidence has been produced showing sonar-related injury to marine mammals; (2) the Council for Environmental Quality (CEQ) invoked the emergency provision of its regulations allowing for alternative EIS compliance; and (3) the President determined that the use of this sonar was

"essential to national security." Amici are concerned that unless the lower court rulings are reversed, those decisions, and others like them, will have a significant detrimental impact on our nation's military readiness and national security as well as violate the separation of powers by intruding upon the President's power as Commander in Chief.

SUMMARY OF ARGUMENT

The paramount obligation of the national government is the defense of the homeland. Concomitant with that obligation is constant and ever improving military readiness, particularly in an era of sophisticated weaponry, global security threats, and foes committed to unconventional tactics. In a time of active conflict on multiple fronts, the urgency and importance of military exercises cannot be overstated and must not be underestimated or trivialized as mere "training." From the Nation's earliest days through our own time, our lawmakers and laws have recognized the paramount importance of military training to military readiness and, therefore, to the national defense. Pet. Br. at 3 (citing, *inter alia*, *The Federalist* No. 24 at 160-62 (Alexander Hamilton)).

Even amidst the urgency of its core task of maintaining the national security, the United States Navy thoroughly assessed, in a 293-page environmental assessment (EA), the potential for damage to marine mammals posed by the use of mid-frequency active (MFA) sonar in the Southern California Operating Area (SOCAL) exercises at issue in this litigation. The conclusions of that

careful study, consistent with the last 40 years of SOCAL exercises of this type, have revealed no evidence of sonar-related injury to any marine mammal.[2] Pet. Br. at 3. The Navy thus determined that, because its SOCAL exercises had no significant impact on the environment, an EIS would not be required. Despite this finding, the Navy engaged in substantial mitigation efforts to minimize any impact MFA sonar might have on the marine environment, including on marine mammals. App. 220a-230a.

Respondents brought suit alleging violations of the National Environmental Protection Act (NEPA), the Coastal Zone Management Act (CZMA), and the Endangered Species Act (ESA), and sought an injunction prohibiting the use of MFA sonar in the Navy's SOCAL military exercises. After an earlier stay and a remand by the Ninth Circuit, the district court, on January 10, 2008, issued the modified preliminary injunction at issue here, which severely restricts the use of sonar in the course of the Navy's SOCAL exercises. The Chief of Naval Operations

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[2] The Navy has, in fact, a special appreciation for dolphins. The Navy's Marine Mammal Program based in San Diego, California, relies on dolphins to detect and mark deep-water sea mines to help protect lives and naval assets. Because of their diving capabilities and sophisticated biosonar system, the Navy-trained dolphins assist Navy personnel in this important mission. For example, in 2003, Navy dolphins detected and helped disarm over 100 anti-ship mines planted by Saddam Hussein's forces in Umm Qar's port. Gasperini, *Uncle Sam's Dolphins*, SMITHSONIAN (Sept. 2003). The Navy's treatment of these dolphins exceeds federal laws governing their acquisition, care and treatment. *See* http://www.spawar.navy.mil/sandiego/technology/mammals/animals.html.

(CNO) determined that these restrictions would put training, deployment, and national security at grave risk. Pet. Br. at 13.

Petitioners have demonstrated persuasively that the Ninth Circuit erred by deferring not, as this Court's well-settled precedents require, to the CEQ's interpretation of the term "emergency circumstances" in its own regulation, but to the district court's interpretation of this purely legal question. Pet. Br. at 27-33. Petitioners have also demonstrated that, in any event, the district court did not properly balance the equities in light of clear congressional determinations in both the Marine Mammal Protection Act (MMPA) and the CZMA that national security concerns take precedence over the environmental concerns at issue here.

But amici submit that the district court's preliminary injunction is defective for a more fundamental reason: it impermissibly intrudes upon the Executive's Commander-in-Chief power. This Court has repeatedly made clear that the Congress may not intrude upon the President's command and deployment of the armed forces. Notably, this authority extends to training exercises, even in peace time. As our Nation currently is in a state of armed hostilities throughout the world, the Composite Training Unit Exercises (COMPTUEXs) and Joint Task Force Exercises (JTFEXs) at issue here fall comfortably within the ambit of the President's core Commander-in-Chief capacity to command the military so as to assure its readiness in the national defense.

Thus, to the extent that NEPA's procedural EIS requirement is read to intrude upon this authority, it is unconstitutional as applied. Indeed, viewing this case through the lens of Justice Jackson's well-known separation-of-powers analysis in *Youngstown Sheet & Tube Co. v. Sawyer*, 343 U.S. 579 (1952), it is clear that the Executive's power in this instance is at its zenith. A variety of relevant Congressional enactments buttress this view—including the Authorization to Use Military Force enacted in the immediate aftermath of the September 11, 2001 attacks and the Authorization for Use of Military Force Against Iraq Resolution of 2002—both placing the Nation on a war footing; Section 1456(c) of Title 16, which permits the President to exempt federal actions from CZMA compliance if he determines that such exemption is in the "paramount interest of the United States," 16 U.S.C. § 1456(c)(1)(B); and Section 1371(f) of Title 16, which authorizes the Secretary of Defense to exempt from MMPA compliance military activity that is "necessary for the national defense." 16 U.S.C. § 1371(f)(1) (Supp. V 2005). In short, the Ninth Circuit's decision upholds the grant of the drastic remedy of an affirmative preliminary injunction that intrudes upon the core functions of the Commander in Chief.

Importantly, this is not simply an academic exercise. This is a volatile period in world affairs. Our own armed forces are presently involved in two theaters of battle in both Iraq and Afghanistan; the Russian Federation has recently engaged in hostilities with Georgia, our democratic ally in the war on terrorism; and tensions within and among

nuclear powers such as Pakistan and India threaten regional stability in areas vital to our own national interest. At such a time, judicial second-guessing of military priorities (about which the Congress and President agree) represents more than an erroneous legal conclusion or an imprudent preliminary injunction; it constitutes a threat to national security itself. The judgment of the court of appeals should be reversed, and the case remanded with instructions to vacate the preliminary injunction.

ARGUMENT

I. THE USE OF MFA SONAR AS PART OF THE CHALLENGED MILITARY EXERCISES IS INTEGRAL TO NAVY COMBAT READINESS.

Throughout our Nation's history, the Navy has played a vital role in major world events occurring during both times of war and peace. As a maritime Nation, the United States relies on the "Navy's ability to operate freely at sea to guarantee access, sustain trade and commerce, and partner with other nations to ensure not only regional security but defense of our own homeland." App. 314a (statement of Rear Admiral Ted N. Branch). For this reason, it has been recognized that this ability "to operate freely at sea is one of the most important enablers of national power: diplomatic, information, military and economic." App. 315a-316a (statement of Rear Admiral Ted N. Branch). The only way to ensure our Nation's ability to so operate at sea is through naval training. Indeed, it is a Navy maxim that "We train as we will fight so that we will fight as we have

trained." J.A. 576 (statement of Captain Martin N. May).

Antisubmarine warfare has long been a key component of naval warfare. Because submarine detection and antisubmarine warfare require the coordinated efforts of vast numbers of Navy personnel, repeated training in battle conditions is essential to naval readiness. And, in our modern era, advanced technologies enable our enemies to deploy submarines that are capable of carrying long-range weapons while operating in virtual silence, nearly wholly undetectable except through the use of MFA sonar. Thus, antisubmarine warfare training utilizing MFA sonar is an absolute necessity in preparing our Navy to detect and combat enemy submarines.

It goes without saying that, in a time of armed conflict, naval training and readiness are indispensable. Indeed, with American troops currently deployed throughout the world and, specifically, engaged in war in Afghanistan and Iraq, the Navy's role in our national security has never been more important than at the present. Maintaining an effective and proficient Navy, therefore, is of the utmost importance to the United States' national defense and homeland security. It is for this reason that the President determined that "the COMPTUEX and JTFEX, including the use of mid-frequency active sonar in these exercises, are in the paramount interest of the United States." App. 232a.

A. A Well-Trained Navy Has Always Been A Cornerstone Of Our National Defense.

Naval training has undoubtedly been at the center of the U.S. Navy's prior wartime and peacetime successes. Only a well-trained navy could have successfully fought in both the Atlantic and Pacific oceans simultaneously, as the U.S. Navy demonstrated in World War II. During World War II, the U.S. Navy's antisubmarine training was largely responsible for defeating the German submarines that were dangerously close to securing victory in the Battle of the Atlantic. *See* THEODORE ROSCOE & RICHARD G. VOGE, UNITED STATES SUBMARINE OPERATIONS IN WORLD WAR II xviii (Naval Institute Press 1949). It was also the joint training exercises of Operation Tiger that prepared the U.S. Navy and Army for the Normandy Invasion. *See* Operational Archives, Naval Historical Center, Operation Tiger, *available at* http://www.history.navy.mil/faqs/faq20-1.htm (last visited July 23, 2008). Without this preparation, one of the most important battles in world history, D-Day, may have resulted in devastating failure for the United States and its allies.

The Cuban Missile Crisis presented another major world event in which the Navy's readiness was of critical importance to our national security. In 1962, naval forces under U.S. Atlantic Command maintained a month-long naval "quarantine" of the island of Cuba in order to prevent the Soviet Union's deployment of ballistic missiles there. Cuban Missile Crisis, 1962, *available at* http://www.history.navy.mil/faqs/faq90-1.htm (last visited July 23, 2008). The

immediate readiness of the U.S. Navy in these circumstances defused a situation that came as close as the United States and Soviet Union ever came to global nuclear war. *Id.* At a minimum, the Navy blockade was a demonstration of the United States' strength. Naturally, the beneficial effects of naval training did not end with World War II or even the Cold War. Naval training exercises have continued to adequately prepare the Navy for effective and safe military campaigns and have continued to symbolize a strong Nation at the ready to protect its interests at home and abroad.

That a well-trained Navy indicates and symbolizes American strength is not a creation of fantasy. It is a theme well-recognized by our Nation's prior and current enemies. Indeed, the importance of the U.S. Navy was not overlooked by the Japanese in their bombing of Pearl Harbor, nor was the symbolism of a U.S. Navy destroyer lost in al-Qaeda's suicide bombing attack against the *USS Cole*. That the Navy has been a target of strategic and symbolic attacks from our Nation's enemies further demonstrates the need for proper training to ensure the safety and success of the Navy in its vital role of defending the homeland.

Undoubtedly, thorough training is a requisite to an effective Navy. On-the-job training in combat, it follows, "is the worst possible way of training personnel" and can place the success of military missions "at significant risk." App. 278a (statement of Rear Admiral John M. Bird). Consequently, naval training should be performed prior to actual combat to ensure the preparedness and eventual success in

our Navy's military missions. This seemingly obvious statement is, quite possibly, even more relevant to the Navy's mission of defending against enemy submarines.

B. Training For Anti-Submarine Warfare Is A Critical Component Of Naval Readiness.

The Navy is the only service—military or otherwise—that can address the threat from submarines, and any curtailment of its ability to train for this mission would decrease the Navy's ability to handle that threat. App. 315a (statement of Rear Admiral Ted N. Branch). For years, the Navy has employed SONAR to "identify and track submarines, determine water depth, locate mines, and provide for vessel safety." App. 266a (statement of Rear Admiral John M. Bird). The Navy started using SONAR after World War I, and every naval vessel engaged in antisubmarine activity was equipped with sonar systems by the start of World War II. App. 268a. Indeed, as indicated above, antisubmarine warfare was integral to the Navy's successful campaigns against German submarines in World War II.

Antisubmarine warfare is a science in which considerable effort goes into making and maintaining contact with the submarine. App. 354a-356a; *see also* App. 278a ("ASW occurs over many hours or days. Unlike an aerial dogfight, over in minutes and even seconds, ASW is a cat and mouse game that requires large teams of personnel working in shifts around the clock to work through an ASW scenario.")

This fact is even more applicable when quiet, diesel-electric submarines—submarines increasingly utilized by hostile nations—are involved; modern diesel-electric submarines are capable of defeating the best available passive sonar technology by "suppress[ing] emitted noise levels." App. 274a. In addition, the far-reaching range of weapons found on modern submarines make it possible for those submarines to avoid placing themselves within range of passive sonar. App. 274a. As a result, active sonar is necessary to detect the presence of diesel-electric submarines. App. 269a-270a. The Nation's top naval officers agree that the Navy must be able to freely utilize MFAS during antisubmarine warfare training in order to properly defend against the threats posed by diesel-electric submarines. See, e.g., App. 311a-325a, 338a-347a, 350a-357a..

If the Navy were prevented from training with MFAS or other active sonar, and were limited to using passive sonar in certain situations, the survivability of the Navy's antisubmarine missions would ultimately be placed at "great risk." App. 269a (statement of Rear Admiral John M. Bird). "[R]ealistic and repetitive [antisubmarine warfare] training with active SONAR is necessary for our forces to be confident and knowledgeable in the Navy's plans, tactics, and procedures to perform and survive in situations leading up to hostilities as well as combat." App. 277a. Therefore, blanket mitigation measures on MFAS training "would dramatically reduce the realism of [antisubmarine warfare] training" and would be fraught with "severe national security consequences." App. 273a (statement of Rear Admiral John M. Bird).

C. The Navy's Use Of MFA Sonar In The Challenged Military Exercises Is Indispensable To Our National Security In This Time Of Armed Hostilities Across the Globe.

It is clear that the COMPTUEX and JTFEX training exercises are the only way the Navy's Pacific Fleet can gain the realistic training that is necessary, especially during a time of war. These exercises represent the singular opportunity for 6,000-plus Sailors and Marines to train together in a realistic environment prior to deployment and to gain proficiency in MFAS. App. 270a-271a; App. 343a. Anytime a strike group is prevented from becoming fully proficient in MFAS, and therefore cannot be certified as combat ready, national security is negatively affected. App. 271a (statement of Rear Admiral John M. Bird). And, considering the heightened sensibilities in a time of war, any interference creates a severe impact on training and certification of readiness to perform realistic antisubmarine warfare. Because the stakes of antisubmarine warfare are so high, contact with an enemy submarine is not surrendered unless there is an order to do so. App. 355a. Even a few minutes of MFAS shutdown "would be potentially fatal in combat." App. 355a-356a (statement of Vice Admiral Samuel J. Locklear, III). As a result, a single lost contact with the submarine "cripples certification for the units involved" in the exercises. App. 356a; *see also id.* ("It may take days to get to the pivotal attack in antisubmarine warfare, but only minutes to confound the results upon which certification is based."). For these reasons, the Chief of Naval

Operations, who is specifically responsible for organizing, training, equipping, preparing and maintaining the readiness of Navy forces, described COMPTUEX and JTFEX as "indispensable" training exercises. App. 342a (statement of Admiral Gary Roughead).

Unsuccessful naval training in the area of antisubmarine warfare can have far-reaching consequences. As Rear Admiral Ted N. Branch recognized:

> Any restriction or disadvantage imposed on our [antisubmarine warfare] capability that impedes the U.S. Navy's ability to retain control of the sea or project naval forces may . . . result in nothing less than a breakdown of the global system, a significant change in our international standing, and an alteration in our established way of life.

App. 324a. The Navy's Carrier Strike Groups and Expeditionary Strike Groups, the survivability of which is dependent on active sonar, are instruments of national policy "through participation in combat operations . . . , through bilateral exercise participation with partner nations around the world, engagement with officials and civilians of other nations through port visits, and crisis response or humanitarian relief assistance." App. 321a-322a. Furthermore, it is only through maintaining effective antisubmarine warfare capability that the United

States can convince its potential adversaries that they cannot prevail. App. 315a. Potential adversaries in the Asia-Pacific region and the Middle East operate submarines in their navies, App. 270a, and the Arabian Gulf, Strait of Malacca, Sea of Japan, and the Yellow Sea, consistent areas of deployment for Navy strike groups, all contain water less than 200 meters deep. App. 331a. These shallow waters are optimal operating areas for the diesel-electric submarines that "pose the primary threat to the U.S. Navy's ability to perform a number of critically necessary missions essential to both peacetime and wartime operations." App. 271a (statement of Rear Admiral John M. Bird). As a result, "[a]nything short of full [antisubmarine warfare] competency" by the U.S. Navy threatens our national security, by "convey[ing] the message that we may be vulnerable, and may embolden our adversaries." App. 315a (statement of Rear Admiral Ted N. Branch).

Antisubmarine warfare training in Southern California is an absolute necessity for the competency of Navy's Pacific Fleet, as antisubmarine warfare is the Fleet's number one war-fighting priority. App. 270a (statement of Rear Admiral John M. Bird). If the Pacific Fleet were prevented from properly training in Southern California, a deterioration of our Nation's naval and military readiness would surely result. Forty percent of the Navy's active aircraft carriers are homeported on the West coast, *see* App. 317a-318a, and there is no suitable alternative training location available to ships based on that coast. App. 322a. "Sending extra ships to the east coast would place an unacceptable burden on the

port infrastructure that would be required to support them." App. 322a (statement of Rear Admiral Ted N. Branch). If the Navy were forced to make the impractical decision to train West coast ships on the East coast, "[m]aintenance facilities would be over capacity, slowing repairs and dramatically increasing costs." App. 323a. As a result, it is not feasible for West-coast based ships to use the training facilities and ranges on the East coast to achieve MFAS certification. App. 322a. Over 40 years of naval training in Southern California testify to this fact. App. 272a.

In short, the use of MFA SONAR is the only effective means to detect and track enemy submarines. Quick detection of enemy submarines provides intelligence to our Naval commanders and enables successful antisubmarine warfare. Because there is no substitute for the Navy's complex and coordinated strike force training and because there is no suitable location other than Southern California to undertake such training, the Navy's use of MFA SONAR in the challenged COMPTUEX and JTFEX training exercises in Southern California, as recognized by the President, is critical to Navy combat readiness and "essential to national security" in this time of war. App. 232a.

II. THE NINTH CIRCUIT'S RULING VIOLATES THE SEPARATION OF POWERS BY ENCROACHING UPON THE PRESIDENT'S COMMANDER-IN-CHIEF POWER.

Article II, Section 2, of the Constitution provides that the President "shall be Commander in

Chief of the Army and Navy of the United States." The obligation to keep the Nation safe from foreign attack is the very highest duty of the government. As the Constitution itself promises, the "United States shall guarantee to every State in this Union a Republican Form of Government, and shall protect each of them against Invasion." U.S. Const. art. IV, § 4. The Constitution's allocation of responsibilities, therefore, must be read with the importance of this guarantee in mind. In particular, the designation of the President as Commander in Chief with the primary responsibility for commanding the Nation's response to threats to the national security should not be seen as either accidental or malleable. *See The Federalist* No. 70 (Alexander Hamilton) ("Decision, activity, secrecy, and dispatch will generally characterise the proceedings of one man, in a much more eminent degree, than the proceedings of any greater number; and in proportion as the number is increased, these qualities will be diminished.").

The Executive's Commander-in-Chief power, at its most basic level, undoubtedly encompasses the authority to direct the movement of the armed forces: "As commander in chief, [the President] is authorized to direct the movements of the naval and military forces placed by law at his command, *and to employ them in the manner he may deem most effectual* to harass and conquer and subdue the enemy." *Fleming & Marshall v. Page*, 50 U.S. (9 How.) 603, 615 (1850) (emphasis added); *Youngstown Sheet & Tube Co. v. Sawyer*, 343 U.S. 579, 587 (1952) (acknowledging the "broad powers in military commanders engaged in day-to-day fighting in a theater of war"); *Hamilton v. Dillin*, 88 U.S. (21 Wall.) 73, (1874) ("[The] President

alone . . . is constitutionally invested with the entire charge of hostile operations."); *The Federalist* No. 74 (Alexander Hamilton) ("Of all the cares or concerns of government, the direction of war most peculiarly demands those qualities which distinguish the exercise of power by a single hand."). Indeed, the Commander-in-Chief Clause is a "specific textual commitment of decision-making responsibility in the area of military operations in a theatre of war to the President, in his capacity as Commander in Chief." *DeCosta v. Laird*, 471 F.2d 1146, 1154 (2d Cir. 1973); *see also Chicago & S. Air Lines, Inc. v. Waterman S.S. Corp.*, 333 U.S. 103, 109 (1948) (explaining that the Executive "possesses in his own right certain powers conferred by the Constitution on him as Commander-in-Chief and as the Nation's organ in foreign affairs"). "The language of the Constitution makes the President Commander-in-Chief of the Armed Forces and puts no limitation on his power in this capacity. Indeed, the paucity of the words exemplifies the totality of his authority in that respect." *United States v. Smith*, 32 C.M.R. 105, 117 (C.M.A. 1962).[3]

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[3] That certain Executive powers, such as the power to direct the movements and preparation of the armed forces, are exclusive and wholly beyond the reach of Congressional encroachment is well-settled. The pardon power, for example, "flows from the Constitution alone, not from any legislative enactments, and . . . it cannot be modified, abridged, or diminished by the Congress." *Schick v. Reed*, 419 U.S. 256, 266 (1974); *see also United States v. Klein*, 80 U.S. 128, 147-48 (1871) (Because "the executive alone is intrusted [with] the power of pardon; and it is granted without limit," it is "clear that the legislature cannot change the effect of such a pardon any more than the executive can change a law."). To be sure,

This Executive power over the deployment of troops and the methods for doing so is exclusive. As explained by William Howard Taft, "[w]hen we come to the power of the President as Commander-in-Chief it seems perfectly clear that Congress could not order battles be fought on a certain plan, and could not direct parts of the army to be moved from part of the country to another." *See* William Howard Taft, *The Boundaries Between the Executive, the Legislature, and the Judicial Branches of the Government*, 25 Yale L.J. 599, 610 (1916); *see also* Westel Woodward Willoughby, *The Constitutional Law of the United States* 1567 (2d ed. 1929) ("[U]nder his powers as Commander-in-Chief of the Army and Navy, and his general control of the foreign relations of the United States" the President has the "discretionary right constitutionally vested in him, and therefore, not subject to congressional control."). This Court has recognized the exclusivity of this Executive power, explaining that Congress's power "necessarily extends to all legislation essential to the prosecution of war with vigor and success, except such as interferes with the command of the forces and the conduct of campaigns. *That power and duty belong*

Congress is entrusted with important powers under Article I, Section 8: "to declare war;" "to raise and support armies;" "to provide and maintain a Navy;" and to make rules for the "Government and Regulation of land and naval Forces," such as by promulgating the Uniform Code of Military Justice. But nothing in those limited grants of authority dilutes the President's sole powers as Commander in Chief—under our Constitution, there remains only one Commander in Chief, not 535. *See Youngstown Sheet & Tube Co. v. Sawyer*, 343 U.S. 579, 644 (1952) ("Congress cannot deprive the President of command of the army and navy . . . .") (Jackson, J., concurring).

to the President as commander-in-chief." *Ex Parte Milligan*, 71 U.S. (4 Wall.) 2, 130 (1866) (emphasis added).

The President's power exclusively to control the movements of military forces, and to direct them as he deems necessary and appropriate to the Nation's defense, flows from the Executive's obligation to defend the homeland from attack. *See* William Howard Taft, *The Presidency: Its Duties, Its Powers, Its Opportunities and Its Limitations* 87 (1916) (explaining that the President's obligation to defend the Nation "grows out, not of any specific act of Congress, but of that obligation, inferable from the Constitution, of the government to protect the rights of an American citizen against foreign invasion"); *The Prize Cases*, 67 U.S. (2 Black) 635, 668 (1862) ("If a war be made by invasion of a foreign nation, the President is not only authorized but bound to resist force by force. He does not initiate the war, but is bound to accept the challenge without waiting for any special legislative authority."); *Campbell v. Clinton*, 203 F.3d 19, 27 (D.C. Cir. 2000) (Silberman, J., concurring) ("[T]he President has independent authority to repel aggressive acts by third parties even without specific congressional authorization, and courts may not review the level of force selected.") (citations omitted).

Although the exclusive power to direct the deployment of the armed forces flows from the Executive's obligation to defend the Nation against foreign aggressors, this power logically extends to training exercises even in peace time: "Through, or under, his orders, therefore, all military operations in

time of peace, as well as of war, are conducted. He has within his control the disposition of troops, the direction of vessels of war and the planning and execution of campaigns." Westel Woodbury Willoughby, *The Constitutional Law of the United States* 1566 (2d ed. 1929). Indeed, in early 1941, *before* the United States entered World War II, Attorney General Robert H. Jackson concluded that the President's power to order the instruction of British flying students, absent congressional authorization, reflected the President's "supreme command over the land and naval forces" permitted him to "order them to perform such military duties" as he deemed necessary. 40 Op. Att'y Gen. 58, 61 (1941).

In addition, Attorney General Jackson announced that the President's authority "undoubtedly includes the power to dispose of troops *and equipment* in such manner and on such duties as best to promote the safety of the country." *Id.* (citing Corwin, *The President: Office and Powers*, 194-97 (1940); Willoughby, *The Constitutional Law of the United States* (2d ed., 1929)) (emphasis added). General Jackson also opined that "of course the President may order the carrying out of maneuvers or training, or the preparation of fortifications, or the instruction of others in matters of defense, to accomplish the same objective of safety of the country." *Id.* at 62. Notably, he concluded that this power "exist[s] in time of peace as well as in time of war." *Id.* at 61.

In light of the President's obligation to act independently of Congress in order to repel attacks,

it is clear why, both in times of war and peace, the power of the Commander in Chief to direct the movements and exercises of the military forces, including, at a minimum, authorizing the use of MFA sonar, cannot be fettered. For just the same reason that there is a single, supreme power of command to direct troops engaged in the heat of battle, the Framers have entrusted the responsibility and authority to repel and to prepare to repel any foreign attack to the Commander in Chief. As Senator William Fulbright explained, "[a]s Commander-in-Chief of the armed forces, the President has full responsibility, which cannot be shared, for military decisions in a world in which the difference between safety and cataclysm can be a matter of hours or even minutes." J. William Fulbright, *American Foreign Policy in the 20th Century Under an 18th Century Constitution*, 47 Cornell L.Q. 1, 3 (1961). As will be shown below, the exercises in the SOCAL program embody just the sort of strategic judgments for preparedness that are at the core of the Commander-in-Chief power.

Senator Fulbright's wise admonition that the exclusivity of the Executive power over military decisions upon which may hang "the difference between safety and cataclysm" is particularly apt where, as here, a court must weigh the public interest in deciding whether to grant a preliminary injunction of the sort granted here. The exercise of the power of equity here amounts to an extraordinary second-guessing of a determination of the Commander in Chief that the paramount interests of the Nation require certain military training. This is all the more remarkable given that Congress has

clearly placed the President at the zenith of his authority as Commander in Chief with respect to the exercises at issue here.

Justice Jackson's concurrence in *Youngstown* provides the starting point for analyzing the legitimacy of executive claims of authority. There, Justice Jackson famously delineated three zones of analysis, rooted in the "disjunction or conjunction" of the President's will with that of the Congress. 343 U.S. at 635 (Jackson, J. concurring). In Zone I, the President acts "pursuant to an express or implied authorization of Congress," and the executive authority "is at its maximum." *Id.* Justice Jackson described Zone II as a "zone of twilight," for there the President acts without either the express permission or the express opposition of Congress, and the executive is limited to its own "independent" powers. *Id.* at 637. Finally, in Zone III, the President acts contrary to the expressed will of the Congress, and there his power is naturally "at its lowest ebb." *Id.* *Youngstown* itself was a Zone III case, and the court determined that the President did not possess independent authority, over and against the will of Congress, when it came to the seizure of steel mills. *See id.* at 640-43.

Here, unlike the facts in *Youngstown*, Congress authorized hostilities against foreign foes,[4]

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[4] On September 14, 2001, Congress passed a joint resolution authorizing the President "to use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed or aided the terrorist attacks" that had taken place on September 11, 2001. 50 U.S.C. § 1541 ("AUMF"). On October 16, 2002,

provided an express statutory exemption in the CZMA for activities deemed by the President to be "in the paramount interest of the United States," and further explicitly expressed its will in the MMPA that the national defense ought to take priority over the protection of marine mammals.

Seen against the background of *Youngstown*, this becomes a much simpler case. Rather than acting in a clash with Congress, the Executive here operates consistent with two separate Congressional authorizations to use military force (the recognition by the AUMF that the hostile attacks of September 11, 2001, placed the Nation on a war footing) and in accord with his statutory power to exempt activities "in the paramount interest of the United States" from the CZMA and with the MMPA's provision for exempting activities "necessary for national defense." And rather than attempting, as in the seizure of the steel mills in *Youngstown*, to usurp an explicit Article I power of the Congress, the President here is exercising a classic power of the Commander in Chief—directing the wartime movements and preparations of the naval forces.

Congress passed a similar resolution authorizing the President "to use the Armed Forces of the United States as he determines to be necessary and appropriate in order to—(1) defend the national security of the United States against the continuing threat posed by Iraq; and (2) enforce all relevant United Nations Security Council resolutions regarding Iraq." Public Law 107–243, § 3(a). As Petitioners have explained, COMPTUEX and JFTEX training is integral to the preparation of Navy men and women who are "deploy[ed] into Iraq and Afghanistan from Navy strike groups." Pet. Br. at 46.

Thus, this case is best and most naturally seen through the lens of *Youngstown*'s Zone I, where the President's authority is at its maximum: the power exercised is a core Commander-in-Chief power. The Congress has placed that power at its zenith by authorizing the President to use military force in connection with the War on Terror and the Iraq War, thereby equipping the Executive with all of the "fundamental incident[s] of waging war," *Hamdi v. Rumsfeld*, 542 U.S. 507, 519 (2004), to be used wherever and whenever necessary and appropriate. The Congress has further codified, in two statutes related to the substantive gravamen of Respondents' complaint (the express exemptions in the CZMA and the MMPA, *see supra*), the very exercise of judgment already committed to the President by the Constitution.

The district court and the Ninth Circuit's decisions suggest that Congress had intended NEPA as a restriction on the President's Commander-in-Chief power even in time of war. If NEPA—a procedural statute imposing no substantive obligations—were to be read that way, the statute is unconstitutional as applied. For while Congress surely has the authority generally to pass laws requiring the executive agencies to have regard for the environmental impact of their plans and policies, the facial validity of NEPA and CZMA (which amici do not challenge) does not translate into the power to interfere with the authority of the Commander in Chief to direct the training and deployment of military forces, particularly in time of war.

As Justice Kennedy has explained, "where the Constitution by explicit text commits the power at issue to the exclusive control of the President, we have refused to tolerate any intrusion by [another] Branch." *Public Citizen v. U.S. Dep't of Justice*, 491 U.S. 440, 485 (1989) (Kennedy, J., concurring) (emphasis in original). Because the President's control over military exercises and military campaigns is exclusive, NEPA as applied by the district court and the Ninth Circuit would necessarily violate Article II. *See id.* at 486 ("Where a power has been committed to a particular Branch of the Government in the text of the Constitution, the balance already has been struck by the Constitution itself. It is improper for this Court to arrogate to itself the power to adjust a balance settled by the explicit terms of the Constitution.").

As noted above, just as the President has no authority to appropriate monies or to raise armies, the Congress has no power to "deprive the President of the command of the army and navy." *Youngstown*, 343 U.S. at 644 (Jackson, J., concurring); *see also Union Pac. R.R. Co. v. United States*, 99 U.S. 700, 718 (1878) ("One branch of the government cannot encroach on the domain of another without danger. The safety of our institutions depends in no small degree on a strict observance of this salutary rule."). For the Congress so to restrict the President, even in time of peace, from deploying the armed forces as he sees fit to acquit his solemn responsibility to defend the homeland would be an unacceptable encroachment. For the Congress to do so, as the Ninth Circuit would have it here, in time of war is unthinkable.

This case, however, does not require this Court to reach these constitutional questions, for here the intent of Congress to defer to the Executive in such circumstances is well established by NEPA, *see* 42 U.S.C. § 4331(b) (establishing that NEPA's requirements be "consistent with other essential considerations of national policy"), and the CZMA's provision for the executive to exempt activities "in the paramount interest of the United States" from its requirements, 16 U.S.C. § 1456(c)(1)(B). Amici therefore join with the Solicitor General in urging this Court to reverse the Ninth Circuit on the grounds that it failed to properly defer to the CEQ's reasonable interpretation of NEPA and its own regulations, namely "that 'emergency circumstances' warranted alternative NEPA arrangements under [40 C.F.R.] Section 1506.11." Pet. Br. at 21.

"When the validity of an act of the Congress is drawn in question, and even if a serious doubt of constitutionality is raised, it is a cardinal principle that this Court will first ascertain whether a construction of the statute is fairly possible by which the question may be avoided." *Crowell v. Benson*, 285 U.S. 22, 62 (1932) (footnote collecting citations omitted); *see also Edward J. DeBartolo Corp. v. Florida Gulf Coast Building & Construction Trades Council*, 485 U.S. 568, 575 (1988); *St. Martin Evangelical Lutheran Church v. South Dakota*, 451 U.S. 772, 780 (1981); *NLRB v. Catholic Bishop of Chicago*, 440 U.S. 490, 500-501 (1979); *Machinists v. Street*, 367 U.S. 740, 749-750 (1961). This Court's "reluctance to decide constitutional issues is especially great where, as here, they concern the relative powers of coordinate branches of

government." *Public Citizen*, 491 U.S. at 466; *see also Am. Foreign Service Ass'n. v. Garfinkel*, 490 U.S. 153, 161 (1989) (per curiam).

The decisions below utterly failed to consider the constitutional implications of their reading of NEPA and the CEQ's regulation concerning alternative arrangements in the light of emergencies. Indeed, rather than cautiously interpreting the relevant laws so as to avoid the separation of powers problem naturally inherent in preventing the Executive from undertaking his core Commander-in-Chief responsibilities, the courts below compounded the separation of powers problems. For not only did they fail to properly apply ordinary administrative law principles of deference and the doctrine of constitutional avoidance, but they substituted their own judgment about military matters for those of the executive.

For example, the Ninth Circuit noted that the district court "conclud[ed] that the mitigation measures it imposed would *not* render the Navy unable to retain and certify its strike groups." App. 55a (emphasis in original). This conclusion flies in the face of the Executive's determination that such injunctive relief "undermine the Navy's ability to conduct realistic training exercises that are necessary to ensure . . . combat effectiveness." App. 232a. This Court has on many occasions emphasized its reluctance to interfere with just these sorts of judgments. Indeed, in *Gilligan v. Morgan*, 413 U.S. 1 (1973), this Court explained that "[t]rained professionals . . . necessarily must make comparative judgments on the merits as to evolving methods of

training, equipping, and controlling military forces with respect to their duties under the Constitution." *Id.* at 8. The Court emphasized that "[i]t would be inappropriate for a district judge to undertake this responsibility." *Id.*; *see also Orloff v. Willoughby*, 345 U.S. 83, 93-94 (1953); *Burns v. Wilson*, 346 U.S. 137, 142, 144 (1953). Yet, the district court judge essentially usurped this responsibility from our military leaders.

As the court of appeals recounted, the district court judge, in an ostensible attempt to gauge for herself the propriety of the Navy's military exercises utilizing MFA sonar, boarded the destroyer *USS Milius* at the naval base in San Diego, California on January 3, 2008. App. 6a. The district court, having had one day of experience with observing Navy operations on the destroyer, used this venture to supplant the veritable and longstanding experience and expertise of both the Navy and the Executive with its own assessment, concluding that the injunction levied against the Navy should survive. This micromanagement of our military is the height of judicial overreach.[5] And it is fundamentally

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[5] Unfortunately, the courts below in this case have not been the only ones that have audaciously exercised judicial power in halting important military training exercises committed to the Commander in Chief. In *Ctr. for Biological Diversity v. Pirie*, 201 F. Supp. 2d 113 (D.D.C. 2002), *dismissed as moot, sub nom., Ctr. for Biological Diversity v. England*, No. 02-5160 & 02-5180, 2003 WL 179848 (D.C. Cir. Jan. 23, 2003), the district issued an affirmative preliminary injunction that enjoined the Navy and Marines from conducting their planned annual live fire training exercises by Navy aircraft on a remote island in the Pacific Ocean leased by the Navy for those purposes. Those exercises were deemed vital to the combat

inconsistent with our system of separate and coordinate branches of government: "Unless Congress specifically has provided otherwise, courts traditionally have been reluctant to intrude upon the authority of the Executive in military and national security affairs." *Dep't of the Navy v. Egan*, 484 U.S. 518, 530 (1988).

Here, the lower courts showed no reluctance to second-guess the Executive determination as to the necessity and nature of military exercises that have been determined by the President to be of "paramount interest" to the Nation. Rather, in an extraordinary zeal to oversee in detail the Executive's compliance with a purely procedural statute, the district and circuit courts have turned on their head ordinary principles of deference as well as deeper principles concerning the separation of powers among all three branches of government. Prudence, as well as the ordinary operation of well-settled principles of administrative law, dictate that this Court walk back from the precipice of constitutional conflict to which the erroneous decisions below have inexorably led. The background principles that this Court has

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readiness of our military in the entire Pacific region, particularly after the terrorist attack on the United States on September 11, 2001. The court ruled that some unendangered common migratory birds would be harmed in violation of the Migratory Bird Treaty Act, despite substantial and costly mitigation efforts by the Navy. In short, a federal judge issued a "cease fire" order to the commander of the *USS Kitty Hawk* battle group, the kind of order exclusively committed to the President and his military commanders; demanded a report back from the commander confirming that the judge's order was carried out; and denied a stay pending appeal.

announced and reaffirmed numerous times in cases upholding the core of the Commander-in-Chief power and the impropriety of both congressional and judicial interference therewith, strongly counsel a reading of NEPA and the CEQ's own regulation that permit the SOCAL exercises to proceed as planned. Fortunately, the text and history of the CEQ's regulation, in light of the procedural nature of NEPA, and against the background scheme of the substantive environmental laws at stake—the MMPA and the CZMA—may most reasonably be construed so as to avoid a constitutional conflict.

CONCLUSION

For the foregoing reasons, and for the reasons set forth in Respondents' brief, the Court should reverse the judgment of the court of appeals and remand the case with instructions to vacate the preliminary injunction.

Respectfully submitted,

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